EXPLORING SOCIAL LEARNING IN THE DEVELOPMENT OF COLLABORATIVE NATURAL RESOURCE MANAGEMENT

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ABSTRACT

Social learning is increasingly cited as an essential process for addressing the complexity and uncertainty of natural resource management. Learning is also emphasized as a key step in developing collaborative natural resource management, or co-management, between agencies and local communities. Yet, a common conceptual understanding of social learning is lacking. This research sought to illuminate the role of social learning in co-management by examining its contribution in two important domains: identification of common purpose and transformation of relationships. Common purpose and collaborative relationships are two of several requisites for co-management between an agency and local community. For the purpose of this research, social learning referred to *learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action*.

A cooperative effort with the New York State Department of Environmental Conservation (NYSDEC), this research investigated how an agency can encourage collaboration with stakeholders in local communities through a deliberative process fostering learning among participants. The research occurred in conjunction with a search conference – a participatory process that engaged diverse stakeholders from local communities in planning for the Lake Ontario Islands Wildlife Management Area (LOIWMA) located in New York's Eastern Lake Ontario Basin.

Specifically, this research had five objectives:

1) Identify characteristics of deliberative processes that enable social learning.
2) Assess the nature and extent to which social learning occurs among participants in a participatory planning process.

3) Examine how social learning contributes to the identification of common purpose (a requisite for co-management).
4) Examine how social learning contributes to the development of collaborative relationships (a requisite for co-management).
5) Begin assessing the feasibility of co-management between NYSDEC and local communities along the Eastern Lake Ontario Basin.

This research utilized a variety of qualitative methods in two phases. The inquiry began with a preliminary situation analysis involving: (a) systematic review of newspaper articles and agency reports, and (b) open-ended interviews with stakeholders. The second phase of inquiry revolved around the design, implementation, and evaluation of a deliberative planning event, the Lake Ontario Islands Search Conference, attended by 32 participants. Data collection procedures involved: (a) observing preparatory meetings, (b) observing the search conference, (c) utilizing evaluation instruments, and (d) conducting structured telephone interviews with participants following the event.

This inquiry examined how social learning occurred among search conference participants by analyzing what they learned (i.e., outcomes) and how they learned (i.e., processes). Eight process characteristics that enabled social learning were identified: open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and facilitation. Understanding process attributes that facilitate learning can aid managers in practice by informing the design of participation processes that enhance public learning and empower collective action.

This research also explored the role of social learning in collaborative natural resource management by analyzing its contribution in two domains: identification of common purpose and development of collaborative relationships. The results

demonstrated that social learning contributes to both common purpose and collaborative relationships. Through social learning, search conference participants identified common purpose that integrated natural resource management and community development. Social learning also involved participants learning about one another and possibilities for working together. Social learning enhanced participants' willingness to be involved in future collaborative efforts by building upon their existing commitments to their professions and communities and their personal connections to the Eastern Lake Ontario region.

Common purpose and collaborative relationships are essential but not sufficient for collaborative natural resource management. Further inquiry is needed to understand how social learning might also facilitate development of other requisites for co-management, including appropriate processes, appropriate structures, capacity, knowledge and information, and supportive policies.

BIOGRAPHICAL SKETCH

Tania Marie Schusler was born in Spokane, Washington to Robert and Nancy Schusler in 1971. She grew up in the small community of Roscoe in northern Illinois. Tania graduated as valedictorian from Hononegah Community High School in 1989. She earned a B.S. in Forestry with a major in Environmental Science and Natural Resources from the University of Illinois at Urbana-Champaign, where she graduated with the University's highest honor of Bronze Tablet in 1993. Throughout her undergraduate education, Tania was active in the University YMCA, where she served as a leader in campus organizations dedicated to environmental protection and social justice. The knowledge and skills she gained through these experiences highly complemented what she learned in the classroom.

In 1993, Tania served as an environmental resource intern with the National Wildlife Federation in Washington, D.C., where she gained insight into the national public policy process. While recognizing the important influence of national public policy on environmental and social issues, Tania realized that she personally could have the greatest impact by working with others to take voluntary action at the local level. From 1994-1998, she managed a statewide volunteer program for the Wisconsin Chapter of The Nature Conservancy. At the Conservancy, she recognized the need for more systematic information about the human context of conservation, as well as the need to better integrate knowledge of ecological and social systems. Her involvement in the Conservancy's community-based conservation efforts led her to undertake research in this area at Cornell University. From 1998-2001, Tania pursued research and studies in the Resource Policy and Management concentration in the field of Natural Resources with a minor in Conservation and Sustainable Development. This thesis is the culmination of that effort.

Tania's time at Cornell University has been a period of tremendous professional and personal growth that has instilled in her a passion to create for others the types of learning experiences that have been invaluable in her own life. Tania also enjoys cycling, cross-country skiing, ceramics, traveling, and reading. Most of all, she enjoys sharing fun with friends and family.

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Thanks are also due to many other amazing, zany, supportive friends in Ithaca who have made my life full. I will always cherish the costume parties, barbecues, mountain bike rides, wine-tasting, skiing, pottery sessions, dinners, Latin dancing, Swedish vowel lessons, pub pedals, and mid-summer dips in Ithaca's swimming holes. And, I thank life-long friends who remain important links to home, Jody Strasser and Dana Brien.

The Ithaca cycling community has kept me sound in body as well as spirit. I am especially grateful for the friendship of riding companions Sara Barker, Sanjay Arwade, Amanda and Mark Shenstone, Don Fitterer, and the fanatical "Night Club."

I owe my greatest thanks to my family, especially my parents, Nancy and Robert Schusler, who are responsible for fostering this accomplishment in many ways –

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CHAPTER ONE

INTRODUCTION: EXPLORING SOCIAL LEARNING IN THE DEVELOPMENT OF COLLABORATIVE NATURAL RESOURCE MANAGEMENT

Justification

Over the last two decades, conservation organizations have increasingly recognized the need to involve local communities in conservation efforts (Western et al. 1994, Sawhill 1998, World Resources Institute 2000). This trend toward community-based conservation reflects the realization that complex challenges of preserving biological diversity and protecting ecosystems in many situations can not be met by a single organization; rather, they require innovative and creative partnerships among a variety of stakeholders in resource management.

Similarly, several trends in the field of wildlife management suggest that contemporary management demands may require agencies to share management responsibility with stakeholders in affected communities. These trends include (1) more people-wildlife problems, which are often location specific, (2) greater public expectations for tailored solutions, (3) broader management responsibilities for agencies, and (4) continuing limitations on agency funds and personnel. Some have suggested that increasing reliance on *co-management* may be the next significant paradigm shift in wildlife management (Decker and Chase 1997).

Indeed, co-management -- also called collaborative, cooperative, participatory, joint, or multi-stakeholder management -- is occurring in a variety of contexts. Co-management has been applied in the management of fisheries, parks and protected areas, forests, wildlife, rangelands, and water resources (Conley and Moote 2001). The term has been used to describe diverse management arrangements that can be conceptualized as a continuum (Figure 1.1) along which partners participate to varying

degrees (Pinkerton 1994, Borrini-Feyerabend 1996, Sen and Nielsen 1996, Pomeroy and Berkes 1997). In any given context, co-management is a dynamic, evolving process that may shift from one point on the continuum to others over time. This research focused on *community-based co-management*, which refers to *a partnership in which governmental agencies and local communities (including resource users, local governments, non-governmental organizations, and other stakeholders) negotiate and share, as appropriate, the responsibility for management of a specific area or set of resources* (adapted from IUCN 1997). Throughout this thesis, I use the terms *co-management* and *collaborative management* interchangeably.

Figure 1.1. Conceptualizing community-based co-management as a continuum of arrangements in which partners participate to varying degrees.

Proponents of co-management describe numerous potential benefits when compared with management by a single, central agency. These include increased effectiveness of management, greater acceptability and legitimacy of management actions, enhanced knowledge and understanding of natural and human systems, increased trust between government agencies and stakeholders, reduced enforcement expenditures and lower transaction costs, and increased public awareness of conservation issues, among others (Pinkerton 1989, Borrini-Feyerabend 1996).

However, co-management is not a panacea. While it holds potential for improved natural resource management, it requires substantial time and resources (human and financial) to implement. Situations also exist for which co-management

would not be appropriate. For example, a crisis situation involving the imminent extinction of a species may require immediate actions that preclude the time needed for collaborative decision-making.

Skeptics of collaborative resource management argue that processes are sometimes co-opted by powerful interest groups (e.g., industry), local control compromises federal laws, consensus-based processes lead to lowest common denominator solutions, partnerships lack representation of diverse interests, collaboration obscures irreconcilable values, and authority is unclear (Coughlin et al. 1999). These criticisms reflect substantial challenges involved in co-management arrangements. Successful co-management depends on many factors, including partners' capacity, available knowledge, supportive policies, processes for communication and conflict management, and structures such as negotiated agreements and working boards, among others (Pinkerton 1989, McCay and Jentoft 1996, Sen and Nielsen 1996, Berkes 1997).

This research was designed to aid natural resource managers addressing such challenges by increasing understanding of how deliberative processes that foster *social learning* contribute to the development of community-based co-management. Several authors propose that learning is essential to address the complexity and uncertainty of natural resource management (Lee 1993, Röling and Wagemakers 1998). For example, Dryzek (1997:198) states:

> A compelling approach to environmental issues demands . . . the capacity to facilitate and engage in social learning in an ecological context. Environmental issues feature high degrees of uncertainty and complexity, which are magnified as ecological systems interact with social, economic, and political systems. Thus we need institutions and discourses which are capable of learning – not least about their own shortcomings.

While social learning has received increasing attention in a variety of disciplines (e.g., political science, urban and regional planning, risk assessment, adult education, and natural resource management), a common conceptual understanding is lacking (Parson and Clark 1995). For the purpose of this research, social learning refers to *learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action.* This research contributes to theoretical understanding of social learning by describing the phenomenon as it occurred in the context of planning for the Lake Ontario Islands Wildlife Management Area (LOIWMA) in New York's Eastern Lake Ontario Basin (Figure 1.2).

I explored the role of social learning in the development of community-based co-management by analyzing its contribution in two important domains: identification of common purpose and transformation of relationships. A cooperative effort with the New York State Department of Environmental Conservation (NYSDEC), this research was conducted in the context of a government agency initiating collaborative natural resource planning. However, the results could also be informative for others (e.g., non-governmental organizations, grassroots community groups, local government, etc.) interested in developing partnerships in natural resource management.

Research Purpose and Objectives

The purpose of this inquiry was to improve understanding of deliberative processes for the development of community-based co-management. *Deliberation* includes any formal or informal process to communicate, raise and collectively consider issues, increase understanding, and arrive at substantive decisions (NRC 1996). Deliberation can refer to a wide variety of processes from public hearings to alternative dispute resolution techniques. Deliberative processes can succeed or fail,

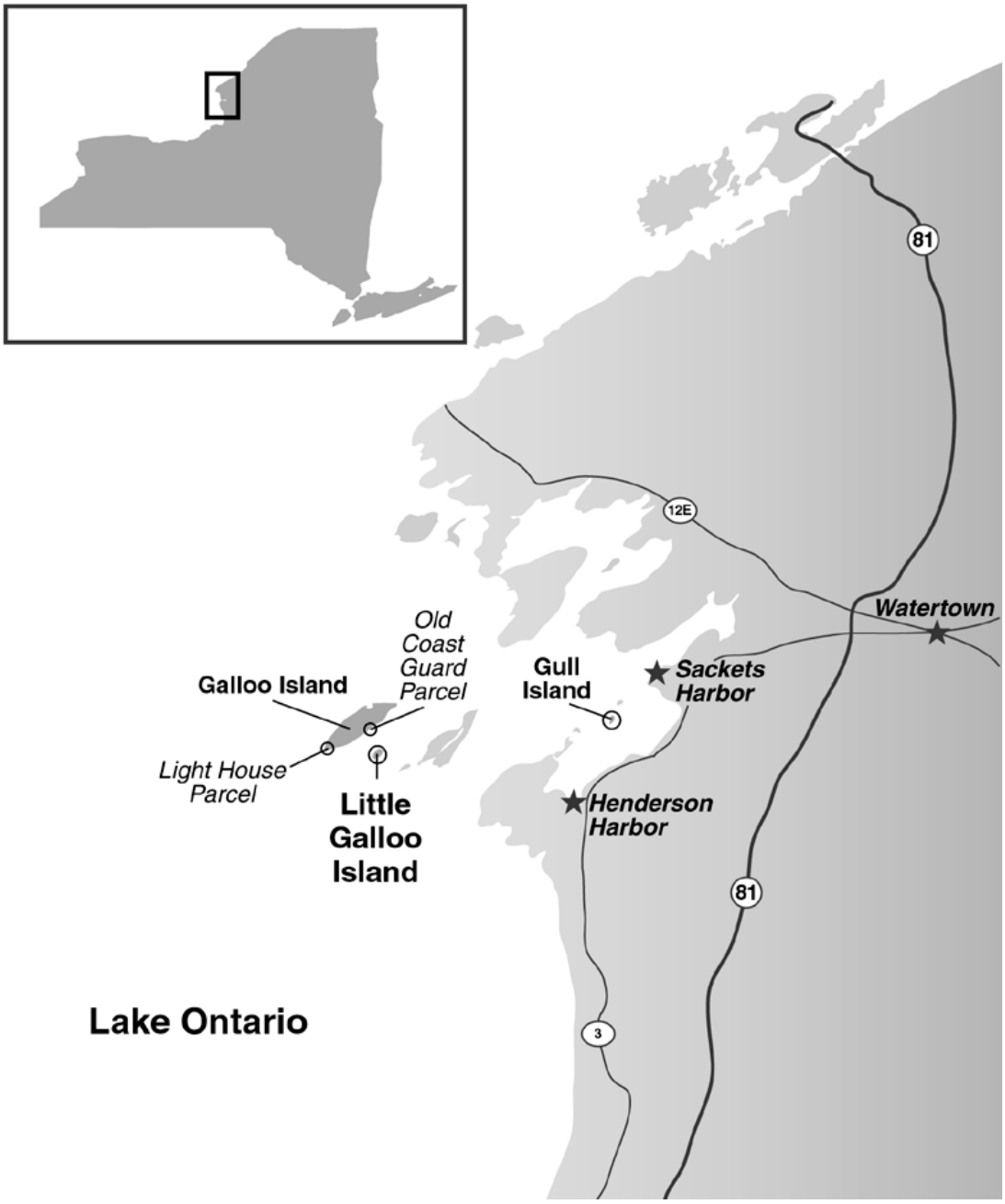

Figure 1.2. Location of the Lake Ontario Islands Wildlife Management Area (LOIWMA) in New York's Eastern Lake Ontario Basin.

empower action or fuel resignation, enhance public learning or rationalize decisions already made (Forester 1999). This inquiry focused on deliberative processes that enable social learning.

Occurring simultaneously with an effort to engage stakeholders in collaborative planning for the LOIWMA, this research analyzed the nature and extent to which social learning occurred among stakeholders participating in a deliberative planning event, a *search conference* (described in Chapter 2). This inquiry also sought to understand how social learning that occurred during the search conference might contribute to the development of collaborative natural resource management. To this end, I gathered evidence through qualitative inquiry to support or refute the following hypotheses:

a) Deliberation that enables social learning contributes to the identification of common purpose.
b) Deliberation that enables social learning contributes to the development of collaborative relationships.

Specifically, this research strove to fulfill five objectives:

1) Identify characteristics of deliberative processes that enable social learning.
2) Assess the nature and extent to which social learning occurs among participants in a deliberative planning event (i.e., search conference).
3) Examine how social learning contributes to the identification of common purpose (a requisite for co-management).
4) Examine how social learning contributes to the development of collaborative relationships (a requisite for co-management).
5) Begin assessing the feasibility of co-management between NYSDEC and local communities along the Eastern Lake Ontario Basin.

Management Planning for the Lake Ontario Islands Wildlife Management Area

Management planning for the LOIWMA in New York's Eastern Lake Ontario Basin provided a valuable opportunity to explore stakeholder participation in deliberative processes for social learning. Management of the islands, which are used as breeding grounds by hundreds of thousands of colonial-nesting waterbirds, affects local communities along the Eastern Basin's shoreline. These tourism-based communities depend economically on the basin's natural resources because recreation (e.g., power boating, sailing, fishing, birdwatching) and the area's scenic beauty are primary amenities sought by visitors. Planning occurred within a climate of ongoing controversy over the impact of double-crested cormorants (*Phalacrocorax auritus*) on the sport fishery and alternatives for cormorant management. The situation involved complex, value-laden judgements and conflict about the adequacy of scientific knowledge and about basic goals and values. These characteristics called for effective dialogue between technical experts and interested and affected citizens (NRC 1996).

The Lake Ontario Islands were designated as a Wildlife Management Area (WMA) following the gift transfer of Little Galloo Island from Phillips Petroleum Company to New York State in late 1998. The WMA program is part of a long-term effort to establish permanent access to lands in New York State for the protection and promotion of its fish and wildlife resources (NYSDEC Division of Fish, Wildlife, and Marine Resources 2001). Per policy requiring management plans for all state lands, the NYSDEC Bureau of Wildlife initiated a planning process for the LOIWMA with the goal of completing a draft plan in the spring of 2001. While all planning efforts include some form of public participation, NYSDEC staff recognized that stakeholder involvement in planning for the LOIWMA would be especially crucial given the level of public interest and controversy that had developed around the cormorant issue. Against this backdrop of controversy, NYSDEC sponsored the Lake Ontario Islands

Search Conference to explore the potential for local communities to realize benefits from the islands, which many stakeholders considered a liability (Schusler and Decker 2000). In addition, leaders of the NYSDEC Bureau of Wildlife had expressed an interest in assessing the potential to engage in collaborative resource management with local communities in the region.

Further background and contextual description is provided throughout the thesis. Chapters Two and Three include descriptions of the Eastern Lake Ontario Basin's rich natural resources and, in particular, the LOIWMA. Chapter Three also describes two communities of primary focus in this research, Henderson Harbor and Sackets Harbor, New York. Appendix one provides a case description of the cormorant-fishery issue, which created a controversial climate for LOIWMA planning.

Definitions and Assumptions

"Natural resource management is the science and art of making decisions and taking action to manipulate the structure, processes, and relations within natural and human systems to achieve specific human objectives" (B. A. Knuth, Cornell University, personal communication). Giles (as cited in Decker et al. 1992:43) defined wildlife management as "the science and art of making decisions and taking actions to manipulate the structures, dynamics, and relations of populations, habitats, and people to achieve specific human objectives by means of the wildlife resource."

This research employed a broad definition of management that encompasses a range of activities influencing people and institutions, as well as animal populations and habitats. Conceptualizing management in this way, its objectives are defined in terms of desired impacts (Decker et al. In review), such as the provision of diverse recreational opportunities, preservation of biological diversity, or enhancement of local economies through development of sustainable resource-based tourism.

Processes that create dialogue between agencies and communities to determine what impacts should be managed for are one component of community-based co-management. Examples of management actions to achieve the impact of diverse recreational opportunities in the Eastern Lake Ontario Basin could include stocking the fishery, developing a kayak trail, establishing mooring buoys for viewing colonial waterbirds nesting on the LOIWMA, or promoting the availability of recreational activities to residents and visitors. Sharing responsibility with partners in the implementation of such actions, as appropriate, is another component of co-management.

The term *community* is used in a variety of ways. Two common conceptualizations are "community of interest" and "community of place." The former refers to a collection of individuals joined by a common interest, activity, or occupation. A community of interest could refer, for example, to environmentalists, hunters, or wildlife professionals. This research focused on the latter concept of community, the "… notion of community as webs of social interaction tied to place, history and identity, indicated by the term 'local community'" (Jentoft et al. 1998:429). For the purpose of this research, the term community was used in a geographic sense to refer to a local jurisdiction, such as a township or village.

Although this research focused at the local community level, it recognized that fish and wildlife are public resources. Thus, individuals and groups external to local communities, including visitors to the region and the general public of New York State, also have stakes in management of the LOIWMA. However, I assumed that management of the LOIWMA most directly affects local stakeholders. They directly experience economic impacts related to the health of the fishery. In addition, they could best take advantage of potential benefits from the LOIWMA, such as safe harbor, a kayaking trail, or tourism promotion highlighting the islands and other basin

resources. The scope of this research was limited to stakeholders in the Eastern Lake Ontario Basin region. I recognized that NYSDEC plays an important role in coordinating local actions with those at broader state, regional, national, and international scales. Indeed, non-local stakeholders have been involved in processes specific to cormorant management (Senecah and Sobel 2000, USFWS Division of Migratory Bird Management 2001).

Grimble and Chan (1995:114) define *stakeholders* as "all those who affect, and/or are affected by, the policies, decisions, and actions of the system; they can be individuals, communities, social groups, or institutions of any size, aggregation or level in society." Stakeholders in fish and wildlife management include those individuals and groups who may be affected by or can affect fish and wildlife management decisions and programs (Decker et al. 1996). This includes those who have the authority to make decisions, who are affected or potentially affected by decisions, and who have the potential or power to obstruct the implementation of decisions (Program for Community Problem Solving 1995).

Because this research focused on community-based co-management, it began with identification of geographic communities (i.e., townships and villages) affected by management of the LOIWMA. These included shoreline communities in Jefferson County, New York, particularly Henderson Harbor and Sackets Harbor, as well as the county's urban center, Watertown (Schusler and Decker 2000). However, such communities do not represent homogenous interests (Agrawal and Gibson 1999). Thus, this inquiry sought to include a range of stakeholders from local communities, including individuals with recreational, environmental, tourism, and business interests, among others. Although some stakeholders were identified for inclusion in this research because of their affiliation with a specific organization, they were interviewed as individuals, not as representatives of a particular stakeholder group. In

addition, stakeholders who participated in the Lake Ontario Islands Search Conference did so as individuals, not as representatives of organized stakeholder groups. Finally, as one might expect in small, rural communities where people wear many hats, several participants in this inquiry possessed multiple stakes in natural resource management.

How to define successful co-management is an area of great debate. Success can be measured in two realms: outcomes related to impacts (Decker et al. In review) and those related to process. Many proponents of co-management consider an arrangement successful if process-related benefits are achieved, while critics argue that impacts, such as the conservation of a threatened species or the reduction of human safety threats from wildlife, are the real measure of success. Zanetell (2000) distinguishes between a *positive consequence* and *successful management*. She offers an example of successful management in the case of a declining fishery as "… actual, measurable restoration of species populations and/or critical habitats." Positive consequences, on the other hand, include "… those outcomes that benefit the community and institutions involved, but are not necessarily evidence of successful management" (Zanetell 2000:13).

This research recognized successful management as the ultimate goal of co-management. In the case of natural resource management in New York's Eastern Lake Ontario Basin, successful management could include, for example, maintenance of a diverse fishery or increased tourism from the promotion of natural resource-based activities like birdwatching and kayaking. However, this research also valued the proximate outcomes, or positive consequences, of co-management, such as improved relations and trust among stakeholders and managers. Because this research was conducted in a timeframe limited by the logistics of an academic advanced degree program, its primary focus was on positive consequences, which were more easily measured in the short-term. However, it also provided insight into

how positive consequences – in this case the identification of common purpose and development of collaborative relationships – might contribute to successful management in the long-term.

Finally, I recognize the inherent conflict present between economic development and environmental preservation. However, I believe that some economic development can be compatible with natural resource conservation. In addition, I believe that quality of life in a community encompasses many variables, two of which are the health of the environment and vitality of the economy. This research was based on the presupposition that one does not always occur at the expense of the other. Rather, with forethought and creativity, communities can plan for development that meets these dual goals.

Overview of Methods

The selection of methods was based on the concept of science as a continuous cycle of action and reflection (Greenwood and Levin 1998). Obviously, in a social setting with real people and real issues, ethical considerations would prevent one from conducting an experiment in community-based co-management. However, one could assess the appropriateness of the situation (Schusler and Decker 2000) for taking some initial steps toward collaborative management and, if deemed appropriate, one could intervene (in consultation with participants) to catalyze some of those steps. Analysis of the success or failure of the intervention could contribute to a more credible assessment of the feasibility of collaborative management. This thinking led me to select a multi-method approach combining an intervention, the search conference (Emery and Purser 1996), with a variety of qualitative inquiry techniques, including document review, observation, and interviews (Patton 1990). It was also important to me that this research might be of value to those who participated in it. I hoped that the

search conference would not only serve the purposes of this research and management planning for the LOIWMA, but that it might also provide a useful forum for community members to interact and contribute to additional outcomes of value to participants.

The use of qualitative inquiry provided understanding that is richer and greater in depth than quantitative methods could have offered in this case. However, this inquiry did not provide generalizable results. In assessing the feasibility of community-based co-management, it made the most sense to consider those community members who would be likely to play a role in any co-management arrangement. This research, then, investigated the perspectives of a purposefully selected group of stakeholders. Its results cannot be generalized to the broader community population. Future research addressing the acceptability of co-management among the broader community population would be of value.

This research utilized a variety of qualitative methods in two phases (Table 1.1). The inquiry began with a preliminary situation analysis that included systematic review of newspaper articles and agency reports, open-ended interviews with 8 agency and extension staff, and semi-structured, open-ended interviews with 21 additional stakeholders. Inductive analysis conducted across interviews identified emergent themes in interviewees' responses and detected convergence or divergence in interviewees' perceptions around those themes (Schusler and Decker 2000).

The second phase of inquiry revolved around the design, implementation, and evaluation of a deliberative planning event, the Lake Ontario Islands Search Conference, attended by 32 participants. Data collection procedures included observation of steering committee meetings, observation of the search conference, a mid-conference evaluation instrument, an evaluation instrument completed by participants at the conclusion of the conference, and structured telephone interviews

Table 1.1. Research objectives and associated methods of data collection and analysis.

Data collection	Analysis	Research objectives
Phase I – Preliminary Situation Analysis ➢ Document review ➢ Open-ended interviews with 8 agency and extension staff ➢ Semi-structured, open-ended interviews with 21 additional stakeholders	➢ Inductive analysis across interviews to develop category system of emergent themes	➢ Begin assessing feasibility of co-management between NYSDEC and local communities
Phase II – Exploring Social Learning in Development of Collaborative Management through the Lake Ontario Islands Search Conference ➢ Observation of 3 steering committee meetings ➢ Observation of search conference (by 4 observers) ➢ Mid-conference evaluation instrument (N=25) ➢ End-of-conference evaluation instrument (N=22) ➢ Structured telephone interviews with participants one month after conference (N=29)	➢ Application of theoretical framework in search of evidence to support or refute proposed theoretical construct	➢ Identify characteristics of deliberative processes that enable social learning ➢ Assess how social learning occurs among participants in search conference ➢ Examine how social learning contributes to identification of common purpose ➢ Examine how social learning contributes to development of collaborative relationships ➢ Begin assessing feasibility of co-management between NYSDEC and local communities

conducted with participants approximately one month following the search conference. Analysis utilized a theoretical framework developed from scholarly literature to explain social learning's contribution to collaborative management through the identification of common purpose and transformation of relationships. I applied this framework in analysis of data from observation of the search conference, evaluation instruments, and post-search conference telephone interviews in search of evidence that supported or refuted the proposed theoretical construct. Analysis also sought to identify additional elements missing from the framework. The goal was to refine the theoretical framework based upon the experience of collaborative planning for the LOIWMA.

Social scientists debate criteria for assessing the quality of results from qualitative inquiry. More important than agreement upon universal criteria of quality is that a researcher makes explicit the strengths and limitations of her research results. I employed several methodological processes at different points during this research to enhance the trustworthiness of its results (Lincoln and Guba 1985, Guba and Lincoln 1989). First, this research entailed prolonged engagement involving data collection through multiple methods (document review, interviews, and observation) over the course of two years. During the second phase of inquiry, the search conference was observed by four researchers, which enabled more comprehensive observation as well as cross-checking of interpretations among the research team. Telephone interviews were conducted with participants approximately one month following the search conference to confirm or refute researchers' observations and to gain insights into participants' own interpretations of the search conference experience. While I sought to understand participants' meanings during interviews, this inquiry was not purely interpretive. Its primary purpose was to contribute to theoretical understanding of the relationship between social learning and the development of collaborative

management. To this end, the second phase focused on developing and refining a theoretical framework based upon empirical evidence from this inquiry.

Although the results of this research are not generalizable, understanding gained from this inquiry may be transferable to other contexts. As Greenwood and Levin (1998:79) explain, "Transferring knowledge from one context to another relies on understanding the contextual factors in the situation where the inquiry took place, judging the new context where the knowledge is supposed to be applied, and making a critical assessment of whether the two contexts have sufficient processes in common to make it worthwhile to link them." To enable the reader to make this assessment, I have attempted to provide sufficient contextual description as well as documentation of decision-making involved throughout the inquiry process.

Finally, the ultimate test of the credibility of qualitative inquiry is the response of decision-makers and information users to its results (Patton 1990). In the case of this inquiry, the credibility of its results may best be assessed not by the extent to which it enhances understanding about social learning and collaborative management, but rather by whether it provides knowledge that enables action by NYSDEC and participants toward improved natural resource management in the Eastern Lake Ontario Basin.

Organization of Thesis

This thesis is organized into four chapters, beginning with this introductory chapter, followed by two chapters that form the body of the thesis, and concluding with summary thoughts in the final chapter. The two chapters composing the body of the thesis have been written as independent manuscripts to be submitted for publication in peer-reviewed journals; thus, minor redundancy occurs between chapters.

Chapter One, this introduction, presented justification for the research and described its purpose and objectives. It defined terms used throughout the thesis and explained assumptions underlying this research. Finally, it provided a methodological overview and discussed the trustworthiness of the research results.

Chapter Two describes and evaluates the search conference methodology employed in planning for the LOIWMA. It provides a description of the LOIWMA and presents the results of a preliminary situation analysis that assessed the appropriateness and feasibility of proceeding with collaborative planning. Next, it describes the design and implementation of the Lake Ontario Islands Search Conference and evaluates the process from the perspectives of participants, NYSDEC, and researchers. This evaluative discussion expands upon themes that emerged from our experience with the search conference method, including purpose, scope of focus, participation, conflict, and transferability.

Chapter Three explores the role of social learning in the development of collaborative natural resource management. It presents a conceptual framework explaining how social learning contributes to collaborative management through the identification of common purpose and transformation of relationships. After describing the context and selection of methods, Chapter Three presents results of this inquiry, including evidence of learning, common purpose, and collaborative relationships. It also identifies eight characteristics of deliberative processes that enable learning among participants. These are open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and facilitation. Finally, it assesses social learning's contribution to collaborative action, concluding that learning is necessary but not sufficient to community-based co-management.

Chapter Four summarizes the results of this inquiry and identifies additional areas of research needed to assess the feasibility of community-based co-management in the Eastern Lake Ontario Basin. These include addressing additional requisites for co-management, including appropriate processes, appropriate structures, community and agency capacity, knowledge and information, and supportive policies. Finally, Chapter Four describes the contributions of this inquiry to theory, practice, methods, and policy.

In addition, appendices include a description of the cormorant-fishery controversy that was a backdrop to this research; the invitation and agenda for the Lake Ontario Islands Search Conference; and data collection instruments, including the observation guide for the search conference, mid-conference and end-of-conference evaluation instruments, and the question guide used for post-search conference telephone interviews with participants.

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CHAPTER TWO

ENGAGING LOCAL COMMUNITIES IN NATURAL RESOURCES PLANNING: AN EVALUATION OF THE LAKE ONTARIO ISLANDS SEARCH CONFERENCE

Introduction

Whether initiated by grassroots movements or mandated by state and federal laws, public participation has grown increasingly prevalent in natural resource planning and management. Wildlife management is no exception (Chase 2000). Public hearings, one of the most commonly employed approaches to public participation in governmental decision-making, often prove unsatisfactory to both citizens and managers. Reflecting upon mechanisms for interaction between government officials and the public, Mathews (1994:23) states:

> The standard public hearings that bring citizens and officials together are probably the most counterproductive mechanism of all. … Officials usually make presentations or get lectured at by some outraged individual. Little two-way communication occurs. And with no feedback, people don't think that they have been heard. The prevailing sense is that a decision was reached long before the hearing was scheduled.

Forester (1999:147) concurs, ". . . public hearings are pathological rituals that often minimize responsive interaction and maximize exaggeration and adversarial posturing."

Seeking an alternative to the common "decide-announce-defend" (Forester 1999:63) model of planning in which an agency drafts a management plan and then presents and defends it to citizens at public hearings, the New York State Department of Environmental Conservation (NYSDEC) in cooperation with Cornell University experimented with an innovation in its approach to wildlife management planning in

2000. Using a participatory planning process called a *search conference*, the agency engaged a diverse range of stakeholders from local communities in planning for the Lake Ontario Islands Wildlife Management Area (LOIWMA). Located in New York's Eastern Lake Ontario Basin (Figure 2.1), the centerpiece of the LOIWMA, Little Galloo Island, has also been the focal point of more than a decade of controversy about double-crested cormorant (*Phalacrocorax auritus*) management (Appendix A). Against this backdrop of controversy, NYSDEC sponsored the Lake Ontario Islands Search Conference to explore the potential for local communities to realize benefits from the islands, which many stakeholders considered a liability (Schusler and Decker 2000). The search conference occurred in conjunction with research investigating the contribution of deliberative processes to the development of collaborative resource management. The results of that inquiry are documented in Chapter 3.

This paper describes and evaluates the search process implemented for LOIWMA planning. Its purpose is to share our experience with the search method with others who may be considering alternative processes for public participation in natural resource management. After providing background about the LOIWMA, we present results of a preliminary situation analysis that assessed the appropriateness of proceeding with a collaborative planning process. We then describe the search conference method and its implementation for LOIWMA planning. Finally, we evaluate the Lake Ontario Islands Search Conference and discuss the transferability of this method to other situations.

Lake Ontario Islands Wildlife Management Area

The eastern Lake Ontario islands and adjacent shoals comprise an unique ecosystem that provides important habitat for warmwater fishes, colonial waterbirds,

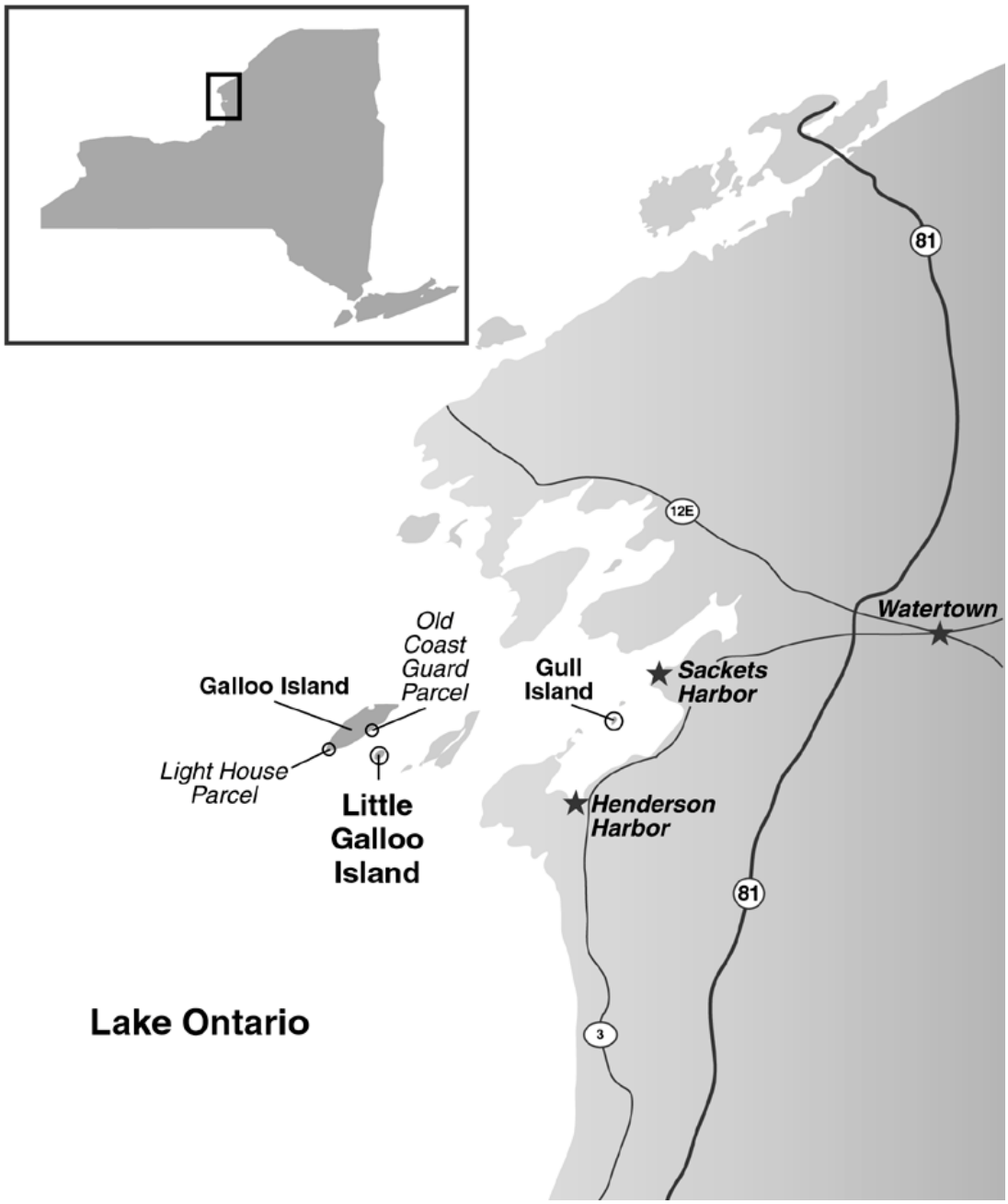

Figure 2.1. Location of the Lake Ontario Islands Wildlife Management Area (LOIWMA) in New York's Eastern Lake Ontario Basin.

waterfowl, and shorebirds. Four parcels owned by NYSDEC constitute the LOIWMA (Figure 2.1): 43-acre Little Galloo Island, two parcels totaling 20 acres on neighboring Galloo Island, and one-acre Gull Island. A colonial waterbird rookery, the islands provide nesting grounds for the only colony of Caspian terns (*Sterna caspia*) in New York State, as well as ring-billed gulls (*Larus delawarensis*), herring gulls (*Larus argentatus*), great black-backed gulls (*Larus marinus*), black-crowned night herons (*Nycticorax nycticorax*), and a highly controversial population of double-crested cormorants (*Phalacrocorax auritus*) (Farquhar et al. 2000).

Since the late 1980's, Little Galloo Island has been at the center of human controversy about the impact of cormorants, an opportunistic predator of fish, on the Eastern Basin's internationally renowned sport fishery. Due to pollution control, ample food supply, and state and federal protection, the cormorant population on Little Galloo Island grew from 22 pairs in 1974 to a peak of 8,410 pairs in 1996 (Farquhar et al. 2000). As cormorant numbers have grown, so too has suspicion that cormorants are a cause of declining fish populations, which many residents of local tourism-based communities feel is threatening their economic livelihoods and traditional lifestyles. The controversy exploded in 1998 when a group of men from shoreline communities illegally shot nearly 1,000 birds (Revkin 1999). Scientific studies have implicated cormorants in the decline of smallmouth bass (*Micropterus dolomieui*), a popular sport species (NYSDEC and USGS 1999). Charter captains, marina owners, and others have urged state and federal agencies to aggressively control the impact of cormorants on the fishery. At the same time, birders, environmentalists, and animal rights supporters have sought continued protection of these birds. Cormorants' protection as a migratory species under federal law and international treaty creates a complex institutional context, involving a variety of actors at the local, state, federal, and international levels. (Appendix A provides more detail about this controversy.)

Following the gift transfer of Little Galloo Island from Phillips Petroleum Company to New York State in late 1998, the Lake Ontario Islands were designated a Wildlife Management Area (WMA). The WMA program is part of a long-term effort to establish permanent access to lands in New York State for the protection and promotion of its fish and wildlife resources (NYSDEC Division of Fish, Wildlife, and Marine Resources 2001). Per policy, NYSDEC Region 6 initiated management planning for the LOIWMA. While all NYSDEC planning efforts include some form of public participation, Region 6 staff believed that meaningful participation in planning for the LOIWMA would be especially crucial given the high level of public interest and controversy that had developed around the cormorant issue. NYSDEC also hoped to explore the potential for future collaborative resource management with local communities in the region.

Preliminary Situation Analysis

In 1999, we conducted a preliminary situation analysis (Schusler and Decker 2000) to aid NYSDEC in designing a community-based approach to develop a management plan for the LOIWMA. The situation analysis identified individuals and organizations with a stake in management of the LOIWMA, examined the range of stakeholder attitudes toward the islands and their management, and assessed the feasibility of proceeding with a collaborative planning process. Methods included systematic document review of 176 newspaper articles published from 1987 to 1999 in national, regional, and local papers; open-ended interviews with 8 staff from NYSDEC, New York Sea Grant, and Cornell Cooperative Extension of Jefferson County; and semi-structured interviews with 21 additional stakeholders in local communities. Stakeholders included charter captains, marina owners, business owners, local gov

ernment officials, tourism professionals, birders and environmentalists, sportsmen, and residents.

Inductive, cross-interview analysis (Patton 1990, Greene 1999) identified several themes. We found that attitudes toward the islands composing the LOIWMA varied greatly among interviewees. While some stakeholders viewed the islands as an asset, others viewed them as devastated chunks of rock with little value. Interviewees' attitudes toward the islands seemed to influence their perceptions of potential benefits that could be realized from the islands' management.

A crucial finding of the situation analysis was that interviewees were most familiar with public meetings as a method for providing input to management planning. Although several noted the same drawbacks described by Mathews (1994) and Forester (1999), few interviewees had experience with other participation processes. This reinforced NYSDEC's belief that an alternative to the common model in which an agency announces and then defends a plan was needed for LOIWMA planning. NYSDEC had successfully employed other forms of participation, such as open houses and citizen task forces, in the region. Planning for the LOIWMA provided a valuable opportunity for the agency to further learn about alternative participation processes by experimenting with a collaborative approach to management planning.

The situation analysis revealed several challenges that a collaborative planning process could address by:

- helping NYSDEC understand how the islands' management fits within the broader socio-economic context of the Eastern Basin region;
- including participants with a more diverse range of perspectives so that NYSDEC would hear from those who were not the most active or vocal advocates of their stakes in resource management;

- enhancing understanding among all involved of scientific information, community needs, and one another's interests and values;
- bolstering existing social capital (Putnam 1993, 2000) through the development of new relationships and building of trust among diverse stakeholders;
- enhancing agency credibility;
- initiating plans for concrete actions (e.g., education, safe harbor, tourism promotion, research) that participants could potentially help implement; and
- serving as a catalyst for ongoing planning and implementation.

The situation analysis suggested that a collaborative planning process would be useful for the LOIWMA, but would it be feasible? To help assess this, we utilized a diagnostic tool developed by Cordova (1997) in our analysis of interview data. Based upon natural resource management and conflict resolution literature, Cordova (1997) identified eight conditions by which to evaluate the feasibility of collaborative planning (Table 2.1). We found several conditions for collaboration present in this case. There were multiple issues (e.g., sustaining the fishery and developing wildlife-based tourism), multiple approaches to addressing those issues, and multiple stakeholder groups involved. Because no single stakeholder group could solve the issues on its own, collaboration was required. It was also in the parties' self-interest to collaborate by virtue of their shared interest in the region's natural resources and shared concern about the future of the fishery and the fate of colonial-nesting waterbirds. In addition, the timing was appropriate. A collaborative planning process would complement concurrent processes addressing cormorant management (Farquhar et al. 2000, Senecah and Sobel 2000, USFWS Division of Migratory Birds 2001). Collaborative planning could build upon interest generated by the cormorant-fishery controversy to generate positive energy around management of the LOIWMA.

Table 2.1. Diagnostics for assessing potential collaboration in resource management planning and their presence/absence based on LOIWMA preliminary situation analysis. (Adapted from Cordova 1997.)

Diagnostics for Assessing Collaboration Potential	Presence/Absence in LOIWMA Situation Analysis
There are multiple issues, multiple approaches to addressing those issues and multiple stakeholder groups involved. No one stakeholder group can solve the issue on its own.	+
It is in the parties' self-interest to collaborate by virtue of shared interests, shared fears, and interdependence.	+
Stakeholder groups are willing to collaborate with others.	?
There is a general institutional and policy context conducive to stakeholder involvement.	—
The timing is appropriate	+
There is capacity for collaborative decision-making – information and experience exist.	—
There is capacity for collaborative decision-making – intrinsic features of stakeholder groups.	?
Power is balanced at the negotiation table. There is a level playing field.	—

Although interview data were insufficient to draw a firm conclusion about the willingness of various stakeholders to collaborate with one another, some interviewees recognized others with opposing opinions on cormorant management as reasonable people and implied some willingness to work together. It was unclear whether stakeholders had the capacity for collaboration. But interviewees' descriptions of their communities as rural areas where people often help each other out suggested that they possessed social capital (Putnam 1993) that, if channeled toward bridging (Putnam 2000) diverse stakeholder groups, could facilitate collaboration. A well designed and executed planning process itself could help build additional capacity.

While the aforementioned forces supported the feasibility of collaboration, three conditions were absent in this case. Although NYSDEC expressed interest in exploring new processes for participation that could lead to collaborative resource management, its limited experience with such approaches implied an institutional and policy context not particularly conducive to collaborative planning. Some interviewees also expressed sentiments that power at the negotiating table was unbalanced. Insufficient information about the desirability and feasibility of possible benefits from the islands' management, along with a lack of experience with collaborative decision-making also reduced the potential for successful collaboration.

Yet overall, it appeared that collaborative planning could occur if a process were carefully designed to build upon those factors supporting collaboration, while working to develop those that were lacking. We were also encouraged by the finding that people shared common ground in valuing the quality of life in their communities. Interviewees overwhelmingly responded that the most pressing issue in the region was building a strong economy while preserving the rural character and natural beauty of the area (Schusler and Decker 2000).

Search Methodology

A search conference is a methodology for participatory planning and design. First developed in the 1960s, the method has been used effectively by organizations and communities for a variety of purposes from strategic planning to community development, addressing social, environmental, and economic issues (Emery and Purser 1996). The process is called a "search" because it brings people together to explore possibilities or search for a desirable future for their organization or community.

Through a structured, systematic process (Figure 2.2), search methodology encourages collective planning aimed at solving problems and realizing opportunities directly relevant to the people involved. Participants share their understanding of a situation, identify ideal futures for their community, predict probable futures, identify areas for change, set priorities, and initiate action planning. One outcome of a successful search is a set of action plans that participants want to pursue collectively. A search conference typically involves 25-75 people participating in a complex interplay of large and small group work sessions over the course of 2½ days (Emery and Purser 1996, Greenwood and Levin 1998).

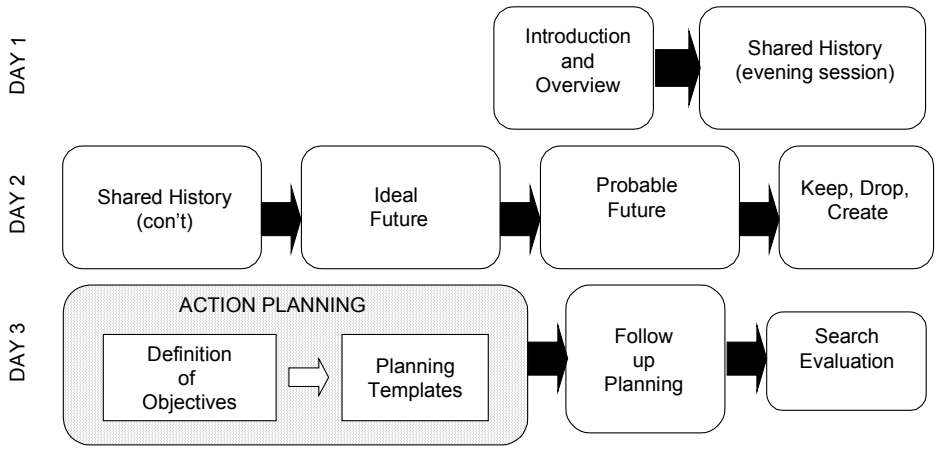

Figure 2.2. Stages of the Lake Ontario Islands Search Conference. Adapted from Martin and Rich (1998).

Several design principles of a search conference may differ from more traditional participation processes with which wildlife managers are familiar. These include:

- Consideration of the system of focus as it interacts with the broader environment.
- Participation that is intentionally diverse. Also, people participate as individuals rather than representatives of a specific organization.
- Valuing the knowledge of all participants. Expert knowledge is not privileged (e.g., wildlife managers participate in the same vein as other participants, rather than in a specific expert or technical role).
- A systematic process that creates valuable arenas for dialogue, or open two-way communication.
- A democratic structure that enables participants to define the direction in which the search proceeds.

A search conference is one among many processes for planning (Bunker and Alban 1997, Holman and Devane 1999). We selected this approach because it matched well with NYSDEC's interest in fostering collaborative management with local communities. In addition, its design emphasizes learning among participants, a focus of research conducted in conjunction with this effort (Chapter 3). The search itself is the centerpiece of a three-phase process (Emery and Purser 1996) that also includes a preparation and design phase prior to the event and an implementation and diffusion phase following it. Next, we discuss the implementation of these phases (Figure 2.3) for LOIWMA planning.

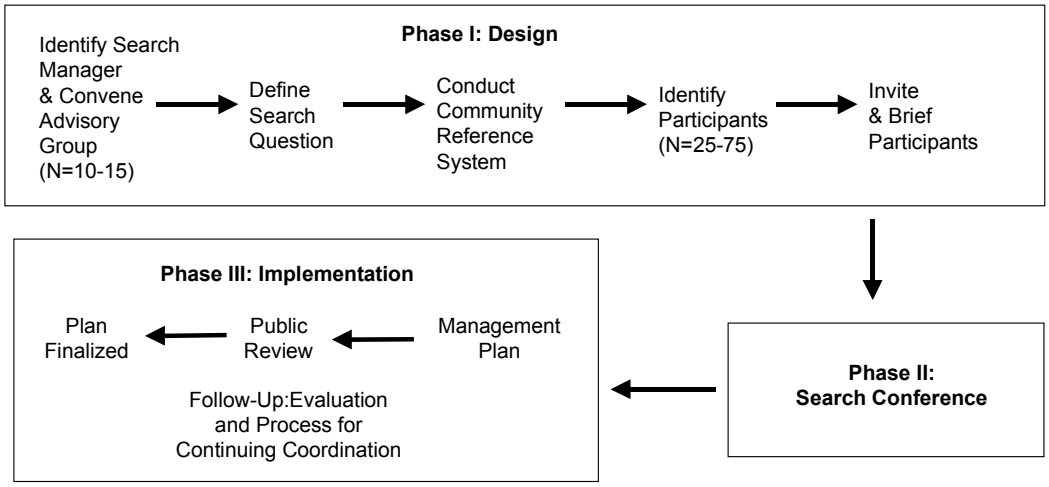

Figure 2.3. Overview of planning process: design, search event, and implementation. Adapted from Pelletier et al. (1999).

Lake Ontario Islands Search Conference

Design

NYSDEC sponsored the Lake Ontario Islands Search Conference with organizational assistance from Cornell University's Human Dimensions Research Unit (HDRU). We began by requesting the assistance of 15 community leaders and resource persons on a steering committee that informed the design of the search conference. In addition to NYSDEC, this committee included individuals with interests in business, extension, planning, local government, tourism, recreation, conservation, and public land management. The steering committee met for 2-3 hours on three occasions during the summer of 2000 with meetings occurring about one month apart. The steering committee helped us design the search conference appropriately for the situation. In addition, these individuals' association with the process enhanced its credibility.

A key task for the steering committee was defining the search question, which provided the overall focus for the event. After substantial discussion and several iterations, the steering committee agreed upon the following question:

> What is the ideal future land use and management of DEC-owned islands in the Eastern Lake Ontario Basin, considering the relationship of the islands to coastal communities?

The search conference would bring together a diverse group of people to discuss this question keeping in mind:

- protecting natural resources,
- benefiting citizens and local communities,
- developing economic opportunities,
- considering concerns of all users,
- sustaining community participation, and
- recognizing legal limitations.

In addition to defining the search question, the steering committee's other major task was the selection of participants through a systematic process called a "community" or "peer reference system" (Emery and Purser 1996, Rich et al. 1999). Similar to the concept of "snowball" sampling, the peer reference system involved an iterative process of asking knowledgeable members of the community for the names of other respected community members. This produced a matrix of potential participants that reflected community interests in natural resource conservation and use as well as community and economic development. The primary criteria for participant selection was to maximize the diversity of perspectives reflected at the search, as well as the demographic diversity (e.g., age, gender, tenure living in region, private or public sector, etc.). This was not a random sample of stakeholders.

The steering committee advised holding the search conference after the end of the tourist season when more invitees would be likely to attend. The committee also suggested that the event occur during the week because many invitees either worked with an agency for which they would participate during work hours or owned a business in which weekends were their busiest time. Of 71 individuals invited, 32 participated (Table 2.2). These included business owners, recreationists, tourism professionals, extension agents, planning staff, town board members, charter captains, environmentalists, state parks staff, and NYSDEC staff, among others. Some of those who declined to attend cited insufficient interest in the topic. Others expressed interest in attending but were unable to because of conflicting commitments in their schedules. We sought to ensure that the search would not be dominated by any single interest by making certain that the diverse perspectives reflected among those invited were also present in the group of 32 individuals attending. This required targeted effort encouraging attendance by a few specific individuals to ensure that their perspectives would be included.

Table 2.2. Diversity of stakes reflected among participants at the Lake Ontario Islands Search Conference.

➢ Birders ➢ Business owners ➢ Charter boat captains ➢ Community development professionals ➢ County planners ➢ Educators ➢ Environmentalists	➢ Extension agents ➢ Kayakers/paddling enthusiasts ➢ Local government officials ➢ NYSDEC staff ➢ Recreational anglers ➢ State parks staff ➢ Tourism professionals

The event

The Lake Ontario Islands Search Conference occurred November 8-10, 2000 in Henderson Harbor, New York at the Charter House Inn. This small hotel located on the shore of Henderson Bay provided a comfortable atmosphere with a view of Lake Ontario that kept the focus of discussion close at hand. Professional facilitators from the Program for Employment and Workplace Systems in Cornell's School of Industrial and Labor Relations managed the conference.

The event began with an evening session that included dinner, providing an opportunity for participants to socialize informally. A slide presentation by NYSDEC staff gave an informative overview of the unique natural resources of the Eastern Basin, including the LOIWMA. This was important because participants' familiarity with the islands varied greatly.

The real work of search conference participants began with the development of a shared history (Figure 2.4) for the Eastern Lake Ontario Basin. The history depicted along a chronological timeline the major events and forces influencing the region. The activity highlighted a complex interplay of ecological, economic, social and political forces shaping the region. It also provided context for subsequent planning and began to air areas of disagreement among participants. Although a few participants felt the shared history took more time than necessary, many found it a valuable learning experience, an interesting finding given that over half of participants (17) had lived in the area for at least eleven years and many for over twenty years. The shared history concluded the evening session of day one.

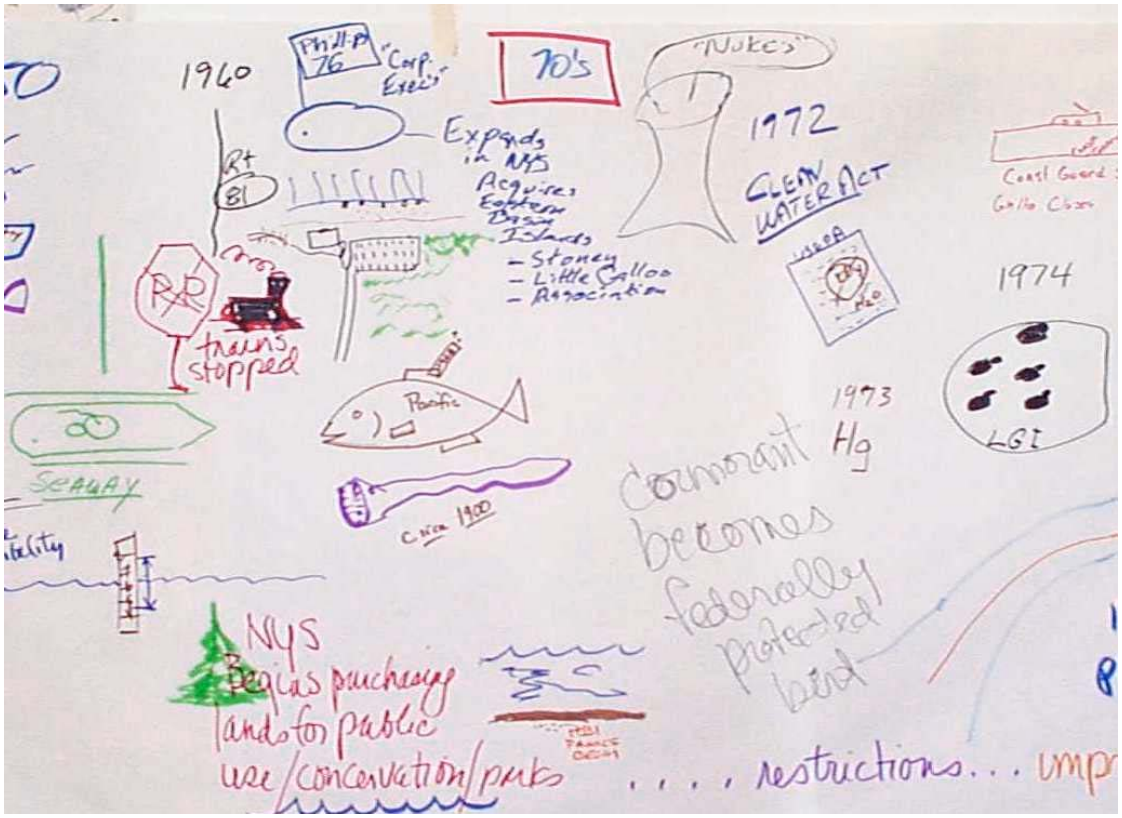

Figure 2.4. A portion of the graphic depiction of the shared history.

On the second day of the event, participants split into four breakout groups. Each group identified traits of what they deemed an ideal future for the LOIWMA and/or the Eastern Basin region in the year 2010. To illustrate, Table 2.3 provides a list of ideal traits developed by one of the four groups. Each breakout group then reported their work to the full group. Despite the diversity of interests that people brought to the table, the ideal futures described by breakout groups overlapped substantially. Several participants were surprised by the extent to which common ground existed. One reflected, "I was blown away that there could be four or five breakout groups all having different discussions and when we came back [and reported back to the large group], all had similar points."

Table 2.3. Ideal traits for the future generated by one of four breakout groups.

➢ Earth science curriculum in local schools based on resource ➢ Council of governments for the basin to discuss regional issues, multi-jurisdictional planning ➢ Eastern Basin recognized as premier destination for natural resource based tourism and knowledge based tourism with world class research facilities ➢ Create an Institute for Cropland and Environmental Research ➢ Eastern Basin has obtained stable, sustainable economy ➢ Coexistence between knowledge and consumption ➢ Key eco-tourism facilities located on islands – resources protected ➢ Public land contributing to tax base (no tax penalty to community for public ownership) ➢ State ownership of best resource based islands ➢ Establish process for local communities and residents to communicate with state and federal agencies ➢ Resource based "magnet" school established ➢ Community objectives for resource management become the standard for regulation

The full group then tackled the task of organizing these ideals for the future into broad categories that would later serve as areas of focus for planning. This was done by "affinity grouping" or clustering similar statements together to form general categories. Thus, the statement "earth science curriculum in local schools based on resource" was joined with similar statements like "resource based 'magnet' school established" to form a category titled "education." By literally cutting apart flip chart pages, re-arranging items, and taping them back together, participants generated five broad categories of focus for further planning:

- community planning and cooperation,
- ecosystem management,
- education,
- recreational resource use, and
- sustainable resource-based tourism.

Nearly all of the ideal future statements fit into one of these categories. The few that did not were discussed briefly and then set aside, recognizing that while they were important, they were not central to the focus of this search conference.

Next, the search managers asked the full group to consider the probable future in each of the five areas listed above if no major changes of direction or new initiatives were undertaken. Table 2.4 illustrates probable future statements related to the area of education. Participants similarly developed statements of the probable future for each of the other categories of focus (i.e., community planning and cooperation, ecosystem management, recreational resource use, and sustainable resource-based tourism). Comparison of the ideal and probable futures emphasized the need for change in many areas, although a few participants found the probable future exercise exaggeratedly negative.

Table 2.4. Predictions of the probable future if no action were taken in the area of education.

➢ Missed opportunity to get kids out of classroom
➢ Lack of appreciation or sense of place instilled
➢ Best and brightest kids will move away
➢ Uninformed electorate
➢ Opportunity for research will come and go
➢ Lose the energy of youth
➢ Erosion of certain resources
➢ Informal family group modeling re: environment will be lost

Participants then split into four new breakout groups and completed an activity called “keep, drop, and create.” Addressing the five categories listed above, each group reflected upon what was currently occurring in communities along the Eastern Basin and asked:

- What should our communities keep doing because it is moving us closer to our ideal future?
- What should our communities stop doing because it is moving us away from our ideal future?
- What new things do our communities need to do because nothing or not enough is being done already?

This exercise produced specific ideas for consideration in action planning the following day. To illustrate, Table 2.5 provides an example of the ideas generated in the area of education.

Table 2.5. A portion of ideas generated through the "keep, drop and create" activity in the area of education.

Keep
➢ Conservation field days
➢ Current educational activities directed at natural resource understanding
Drop
➢ Top down regents mandates
➢ Classroom only natural resource instruction
Create
➢ Curricula for local environmental and coastal education and awareness
➢ Inventory of educational tools and resources related to environment that are already available
➢ Video viewing of colonial waterbirds on islands
➢ Adult education for environmental issues
➢ Publicity, educational handouts
➢ "Citizen science" programs where public could assist in data collection and projects
➢ WPBS show for Eastern Basin
➢ Etc.

Before the conclusion of the second day, participants self-selected one of the five areas in which they would like to focus further in their efforts to do action plan

ning. This process of "prioritizing with one's feet" created five self-defined, action-planning teams, ranging in number from three to eight participants.

Participants reconvened on the third day and, using a template for action planning, each team identified at least one short-term and one long-term objective for their area of focus. Figure 2.5 illustrates a completed planning template for one of the long-term objectives identified by the team addressing education. For each of the five areas of focus (i.e., community planning and cooperation, ecosystem management, education, recreational resource use, and sustainable resource-based tourism), action-planning teams identified several objectives and accompanying action strategies, other groups to involve, information needs, and resource needs. The bulk of the day was devoted to action planning. The event concluded with discussion of next steps.

Follow-up

The search conference concluded with discussion of how NYSDEC would proceed with planning for the LOIWMA and how the group would proceed with additional actions that participants wanted to implement beyond NYSDEC's mission. Participants agreed that they would reconvene within six months to provide feedback on a completed draft plan for the LOIWMA and to assess and further coordinate progress on other action items. NYSDEC would also follow standard procedures for communicating about the draft LOIWMA plan with the broader public and inviting public review and comment on the plan. However, in this case, rather than announcing and defending a plan developed by agency staff alone, NYSDEC would present the public with a plan that already incorporated substantial public input and, presumably, better reflected community interests in the islands' management.

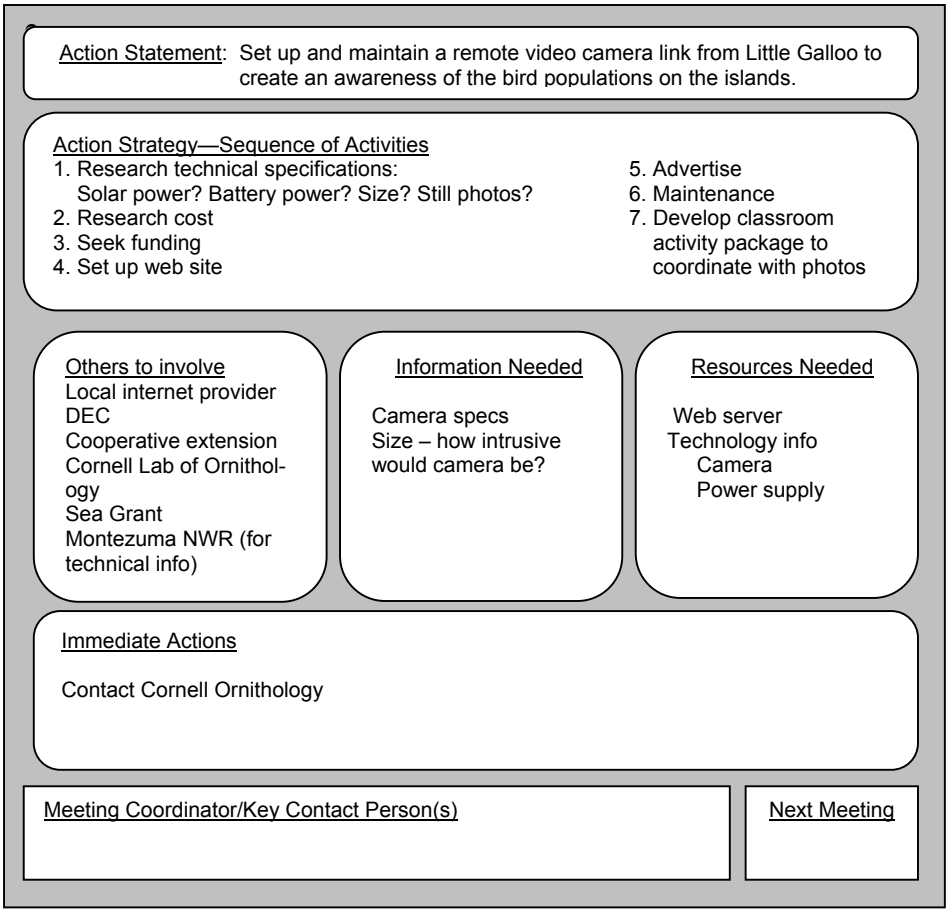

Figure 2.5. Completed planning template for long-term education objective. (Template adapted from R. E. Rich, Program for Employment and Workplace Systems, School of Industrial and Labor Relations, Cornell University, Ithaca, NY.)

Participants also suggested the formation of an Eastern Basin Working Group as a mechanism to maintain communication. However, the function and logistics of such a group were not discussed at any length. More time devoted to discussion of next steps might have clarified what would happen next and who would take responsibility for which actions. Following the event, Cornell University compiled a summary report of the search conference, which was mailed to all participants. The report in

cluded the content of flip chart notes from both small and large group activities, as well as completed action planning forms.

As requested, NYSDEC and Cornell reconvened the search conference participants on May 16, 2001 in Chaumont, New York. Nineteen of 32 participants attended. Nearly all of the 13 participants who were unable to attend the follow-up meeting expressed interest in remaining informed and involved in ongoing efforts. At the follow-up meeting, NYSDEC presented a draft LOIWMA plan for feedback and participants provided updates on progress that had been made in other areas, such as education and tourism. At the meeting's conclusion, it remained uncertain how participants would continue working together. The group agreed it would like to convene again; however, it was unclear who would coordinate the next gathering. A weakness of the search conference design that became clear during the follow-up meeting was the failure to identify a local change agent, aside from NYSDEC, early on in the process. As a result, no one has yet stepped up to lead further actions on community-based initiatives identified during the search conference. Only time will fully reveal the search conference's actual impact.

Evaluation

Participants' perspectives

Upon conclusion of the event, participants completed an evaluation instrument (N=22). Nine out of ten responded that the conference *accomplished its purpose* to a great extent. All respondents (100%) felt that the conference design made sense in terms of its stated purpose. Respondents felt that the *shared history* and *action planning* contributed most to the effectiveness of the conference.

We also contacted participants by telephone (N=29) one month following the event to gain further insight into their interpretations of the search conference experi

ence. We asked people what they found most and least valuable about participating in the search conference. Several common themes were apparent in their comments. Many participants valued the "mix of people" present, providing a diverse range of perspectives, interests, and backgrounds. People also valued the opportunity to meet and network with others. For some, this included merely the opportunity to exchange business cards; for others, it involved the ". . . opportunity to really sit down and talk with people and get to know them better." Several participants valued learning about the region, its issues, and its people. In particular, they gained a greater understanding of others' points of view.

Several participants expressed surprise at the degree of common ground that existed among the diverse population of participants in the search conference. Many participants also valued the opportunity to work together. One person observed, "Much greater willingness to work and collaborate than I had envisioned." Another explained that he found most valuable the "... ability to work with people on the opposite end of the spectrum from where I stood and understand positions which I had little or no real understanding of before." Finally, participants praised the facilitation of the event and appreciated the opportunity to provide genuine input into the LOIWMA plan.

Nineteen of the 29 participants interviewed by telephone could identify *nothing* as least valuable about their experience. The greatest drawback mentioned by others was the time required, which was particularly problematic for those not employed by a public agency who volunteered their time. Indeed, some invitees did not participate because they could not take time away from work and other commitments. Four out of five respondents to the immediate post-event evaluation instrument (N=22) felt that the length of the conference was about right. Although the 2½ day time commitment is substantial, it provides an efficient means to develop a plan in a condensed

timeframe and, depending upon the situation, may be preferable to periodic meetings of shorter duration over several months.

A small number of participants were frustrated with the direction of discussions during certain portions of the event. For example, one person felt that little progress was made in the discussion of ecosystem management; another felt that some discussions were dominated by a handful of individuals. A few participants found portions of the process to be rudimentary and repetitive. One described it as "a bit exhausting." Several participants said that the real value of the process would be measured by what comes of it, as reflected in the following comments:

> "The process is fine, as long as it results in some action – a task list, who'll do what, etc."

> "I'm probably over optimistic of what the long-term results might be, but if several small advances are made (some already have) it will have been time very well spent."

> "Some of the outcomes will need a serious commitment to implement."

We also inquired in telephone interviews how NYSDEC's sponsorship of this search conference may have altered participants' impressions of the agency. Many participants responded that their impression of NYSDEC did not change much because they already had good working relationships with Region 6 staff. Those who responded that their impressions had changed all reported that the search conference interaction contributed to a more positive view of the agency. They appreciated NYSDEC's willingness to try a different, more open approach by reaching out to communities in a neutral forum and listening to ideas from a variety of people. Several participants commented that many of NYSDEC's actions in recent years, of which the search conference was another, had improved their impressions of the agency. As one participant said, "They're much more friendly." Several attributed this to local

leadership within Region 6. Reflecting upon several of NYSDEC's actions in recent years, another participant stated ". . . the challenge to DEC is to keep the bar up."

We do not know how the event may have influenced perceptions among the broader public, as that assessment was beyond the scope of our evaluation. However, one participant explained that he knew others invited to attend who felt the search conference was indicative of "NYSDEC selling out by involving the public to take pressure off themselves." This participant did not agree, especially because he recognized the risk taken by NYSDEC in that "they could have ended up with the public telling them something they really didn't want." This comment suggests that in the future the development of outreach strategies to inform the broader community of stakeholders about the purpose and progress of processes like the search conference would be valuable (Pelstring 1999).

NYSDEC perspectives

For fish and wildlife managers at NYSDEC, a substantial strength of the Lake Ontario Islands Search Conference was the consideration of LOIWMA planning in a comprehensive way that focused on multiple issues rather than the single issue of cormorant management. One manager noted, "The group steered itself away from the cormorant issue. If we had tried to do that, we would have been embroiled in it." Managers found value in bringing together stakeholders with diverse interests to talk in a civil way, gain a better understanding of each others' perspectives, and recognize some areas of common interest. One manager expressed amazement at the positive interactions that occurred among stakeholders with a contentious history. In addition to encouraging communication among these stakeholders, the process also brought managers' attention to the concerns of other stakeholders that had not been previously involved, such as local governments and chambers of commerce. NYSDEC staff were

also impressed by the enthusiasm of many participants. Finally, managers felt that the agency received "many excellent and reasonable recommendations," some of which (e.g., installation of mooring buoys) they intended to implement in 2001.

The above benefits did not come without a substantial investment of time in the event's design and implementation, which managers noted as a potential drawback. In this case, managers felt the time investment was worthwhile. As one stated, "If you want something, you have to work for it." Another drawback noted by NYSDEC was the inability to educate some participants on specific issues. For example, it seemed that many participants did not understand the concept of an ecosystem, nor realize what ecosystem management might involve or the feasibility of undertaking certain recommendations. At times, it was clear to NYSDEC staff that some participants had incorrect information on biological issues, but an opportunity to clarify understanding around these issues did not occur. Managers also cited uncertainty surrounding who would be responsible for which follow-up activities as a drawback. NYSDEC would have liked to see some commitment from others to undertake actions beyond its own mission, but some participants expressed reluctance to do so, understandably given competing demands on their time and resources.

At first skeptical of what could really come of the search process, NYSDEC staff agreed that having experienced it and seen some of its outcomes, they would recommend its use again in the future for certain situations. It would be most appropriate for planning in situations similar to that in the Eastern Lake Ontario Basin, which involve "a strong divergence of opinion and a gem of a resource." One example would be to inform Unit Management Plans in the Adirondack Park. Often in those situations, people are interested in their own segment of an issue and are reluctant to listen to others involved. The search conference method brings those stakeholders together and results in a report summarizing all the perspectives that can guide NYSDEC in

management planning (A. Schiavone, R. D. Faulknham, and J. F. Farquhar, NYSDEC, personal communication).

Reflections on Our Experience

Purpose and expectations

A challenge from the start of the search conference development process that continued throughout was ambiguity about its purpose. Confusion existed in two respects: (1) NYSDEC's intended use of outcomes produced by the search conference, and (2) roles and expectations of participants, especially for follow-up. A question that repeatedly came up during steering committee meetings and at the search conference itself was, "What does NYSDEC intend to do with this?" People were unsure whether the search conference would actually produce the management plan, provide a strong foundation of ideas for the plan, or merely provide some input to be thrown in a hopper with a lot of other ideas that may or may not be incorporated into the plan. As a NYSDEC staff member explained at the start of the event, the agency hoped to accomplish two things:

> One of the reasons I'm here, one of the reasons we're here, is to get some input into a very specific management plan for a very small chunk of real estate. Pretty easy to write a biological component to that. A little more difficult to incorporate public input into it, but that's something that we hope to gain out of this process. I guess that all slides into a much larger context and something I think is more important to this search conference. Yeah, I'll get input and I'll get some good stuff to put into a plan. But there may be things that go way far beyond what DEC can do and what's even within our mission that the folks in this room can decide are important and maybe start selecting some actions and some planning in a broader community sense to accomplish some of those things as well. So hopefully we'll get to two things. A little bit of help in terms of input to our specific land and in a broader sense the betterment of the whole community.

Some of the confusion surrounding purpose could have been diminished through clearer and repeated explanation of expectations. However, it seemed that much of it resulted from a discrepancy evident throughout the event between those who felt the search conference purpose was to inform NYSDEC about what the agency should do and those who viewed the purpose as the collective discovery of what communities could do to realize benefits from the resource. The following comments during the discussion of follow-up to the event illustrate:

> To me it seems like it's going to go into the digestive stage of the DEC to find out what they can actually do. Then when that process takes place, then come back to us and then we'll help take the ball. … I see it as the DEC was the leading force in getting this together. And I think at these stages, I mean like when we come up with ideas, if we could have a contact person in the DEC to say 'hey this came up' or 'that came up.' Then the next time we get together, all of us are going to have more time to digest this and then we may be able to take more of an active role. We need a little nurturing.
>
> I think a lot of what's being talked about today, that you may have community resources that can help do some of this if DEC will come back and work with this group and work with the players. . . . There is a lot of self-help potential here. There's a lot of grassroots, a lot of us can go back and work with our contacts. … We want to be players with DEC. We don't just want to give you input to run independent. We want to stay a part of the process.

Although people struggled with understanding how the LOIWMA plan fit in with other ongoing or potential community-based initiatives, and who would take responsibility for which action plans, it was clear that participants wanted to continue working together. Issues surrounding implementation of action plans, as well as ongoing communication and coordination through an Eastern Basin Working Group, will be important areas for further discussion among search conference participants.

One way in which some of this confusion could have been avoided and a foundation laid for collaborative efforts in the future might have been to include a broader

range of entities in the event's sponsorship. The involvement of additional sponsors, such as local governments, extension organizations, or others, might have made clear that the process was intended not only to inform NYSDEC but also to provide valuable understanding for others' use. NYSDEC and Cornell considered this during design of the search conference but chose not to request additional sponsorship because sponsorship by some entities, such as fishing or environmental organizations, might have connoted a process dominated by specific interests in the minds of some potential participants. However, soliciting sponsorship by entities like Cornell Cooperative Extension or New York Sea Grant could have benefited the process by providing leadership for community development initiatives that would have complemented NYSDEC's leadership on natural resources issues.

Scope of focus

A strength of the process, although at times a source of confusion, was the flexibility in its scope of focus. As mentioned above, discussion during the event followed two parallel tracks, one addressing the future management of the LOIWMA and the other addressing the future of resource management and community development more generally in the Eastern Basin region. This enabled NYSDEC to gather input specific to the LOIWMA, while at the same time allowing participants to address other related issues of concern to them, such as improving coordination between municipalities on zoning regulations. Indeed, NYSDEC hoped the search would encourage consideration of the islands' management within a broader context because this additional information could improve management decisions. In addition, the broader focus enhanced the event's salience for some participants. As one person noted with regard to the broad focus (beyond solely the LOIWMA) of discussions, "I greatly appreciate the moderators allowing that to happen."

Determining the scope of focus was a robust area of discussion for the steering committee in developing the search question. A search conference addressing the future of cormorant management on Little Galloo Island would have been too narrow a focus, while a search conference sponsored by a single agency that addressed the future management of all public lands in the region would have been presumptuous and equally inappropriate. Ultimately, the steering group decided to focus on the islands, emphasizing their interactions – ecological, economic, social, and jurisdictional – with the Eastern Basin coast. Participants' feedback suggested that this focus worked well. A few individuals who had previously participated in other search conferences reported in telephone interviews that the focused, localized scope of this search conference contributed to its success. They found this search conference to be more productive than others they had attended that covered more general, macro issues.

Participation

A key question in the design of any participatory process is "Who participates?" Because the LOIWMA is a public resource, any number of different stakeholders from across New York State could have been invited to participate in the search conference. We limited participation to the local region because we were interested in exploring the potential for collaborative resource management with those stakeholders most directly affected by the islands' management. People in shoreline communities who make their livelihoods from resource-based activities have the most to lose or gain from the islands' management. They not only directly feel the economic impact of a declining fishery, but they also could best take advantage of potential benefits, such as safe harbor, a kayaking trail, or tourism promotion highlighting the islands and other basin resources. Thus, we focused on local participation for input to LOIWMA planning. We recognized that NYSDEC plays an important role in

coordinating local actions with those at broader state, regional, national, and international scales. Indeed, the management plan will be available for review by the broader public before it is finalized. Non-local stakeholders have been directly involved in separate proceedings specific to cormorant management (Senecah and Sobel 2000, USFWS Division of Migratory Bird Management 2001).

Having focused participation locally, the task of determining who would participate still required careful consideration. A benefit of the search process was the use of the peer reference system to identify participants. Doing so provided several advantages. First, the steering group's assistance with the peer reference process resulted in a broad, inclusive group of participants, perhaps more so than NYSDEC staff could have otherwise identified. Steering committee members drew upon their knowledge and contacts to expand the list of potential participants and ensure that all possible stakes would be included among search conference participants.

Systematic identification and selection of participants also enabled the agency to hear from individuals who possessed a stake in resource management but had not actively voiced that stake in the past. NYSDEC was well aware of the views of stakeholders in favor or opposed to cormorant control, a highly polarized issue. The agency was interested in learning about stakes in other aspects of the islands' management. Doing so required dialogue among stakeholders with a diverse range of perspectives and knowledge about additional areas of expertise, such as tourism and community development. The peer reference system provided a mechanism for purposefully identifying such a group. The success of the search conference depended on the individuals who participated. As one participant noted, ". . . the people involved represent as good a group of people as you could have involved."

Many participants reported that the mix of different views was highly valuable and contributed to learning about issues and each other. While participants in the

search conference provided a diversity of perspectives, they could have been more demographically diverse. We sought a group that would be balanced in the ratio of women and men, people employed in the public and private sectors, and people living throughout shoreline communities in Jefferson County as well as Watertown, New York, the regional urban center. We also sought diversity in age and the length of time people had lived in the region. While we succeeded in some of these, the group consisted of 26 men and only 6 women and no one below the age of 30.

Also important was NYSDEC's participation as equals with the rest of the group. Obviously, wildlife managers brought knowledge about the LOIWMA that others did not possess; however, the parallel contribution of this knowledge in the same way that others shared their knowledge of local communities, history, and economic development, for instance, demonstrated that NYSDEC genuinely valued participants' contributions.

A potential problem of participation in the search conference was intermittent attendance by some participants. This was true of the preparatory meetings with the steering group as well. Encouraging participation of as many invitees as possible, we allowed those individuals who could not participate during the entire event to attend portions of it. While most participants were present throughout the entire event, a few participants missed the final day of action planning or attended sporadically. For the most part, this seemed to work fine with minimal disruption to the process. However, a few participants did comment on the intermittent attendance of others and noted that their participation throughout would have been preferable.

We could have avoided this problem by holding the event as a retreat where everyone would have been expected to stay overnight, a format often used for search conferences. However, the steering committee felt it unlikely that most participants would stay overnight given the minimal travel distance required for most attendees

and the likelihood that many would be unable to commit the additional evening time. Holding the event only during the day also reduced facility costs. Overnight accommodations were provided for individuals desiring them, which included a few participants who had to travel longer distances to attend. Those who stayed overnight throughout the event felt that it would have been preferable for all participants to stay at the hotel, creating more of a retreat atmosphere.

Conflict

Prior to the event, we could not predict how the process would play out with respect to an overcast effect from the cormorant controversy. This was one of the first topics of discussion at the initial steering committee meeting. We could not ignore the controversy over cormorants; however, we did not want cormorant management to derail discussion from many potential benefits of the islands' management. An excerpt of discussion within the steering committee illustrates this thinking:

> *Community development professional*: If you can't set it [the cormorant conflict] aside, you'll never get at the big picture . . . It'll just swamp everything else. Not that it shouldn't be resolved, but it would defeat the purpose of this effort, which is bigger.
>
> *Businessperson*: But can you get to the other issues? How do you talk about recreation and so on when you have these birds?
>
> *NYSDEC staff member*: Right now we're doing everything we can that is legally possible . . . somehow we've got to make it clear from the beginning that there are a whole lot of other issues related to these lands. For instance, public use or even education of the public on the uniqueness. How many people are really aware of Little Galloo Island? People have a view of Little Galloo as just cormorants. There are a lot of other things . . . we right here in Jefferson County have something that could be on the Discovery Channel, was on the Discovery Channel. But the viewpoint is that it's a dirty island with cormorants on it. If we look at it as how can we change the public's image of it to benefit the communities on the lake, then we will get past conflicts.

A useful aspect of the search process in this case was how it approached conflict. One aim of the search method is to clarify areas of agreement and disagreement. While doing so acknowledges that conflict exists, the search process is *not* a method for conflict resolution. Areas of disagreement are acknowledged and then set aside so that progress can be made where common ground does exist (R. E. Rich, Cornell University, personal communication). To our surprise, participants themselves recognized the potential for the cormorant issue to create an irreparably divisive atmosphere and limited discussion around cormorants. This may have been due in part to their recognition that the issue was being addressed in other forums, including a national planning effort initiated by the U.S. Fish and Wildlife Service (USFWS Division of Migratory Birds 2001), a conflict mediation process (Senecah and Sobel 2000), and court cases. In addition, NYSDEC had begun cormorant control efforts in May 1999 through an egg-oiling program (Farquhar et al. 2000). During the action planning portion of the search conference, concerns around cormorants were appropriately included within the area of planning labeled "ecosystem management." An evaluation comment reflected a sentiment reported by several participants, "[The] conference showed tremendous balance on a very controversial 'cormorant' issue."

Transferability

When asked in telephone interviews, participants overwhelmingly agreed that the NYSDEC should use the search method again in the future. People felt the approach would be appropriate for:

- regional issues, management planning for other public lands and natural resources, and changes in fishing and hunting regulations;
- situations in which multiple stakeholders (landowners, resource users, etc.) or many sectors of a community are affected by management;

- issues involving controversy, particularly if the agency can anticipate problems and the need for public input and use the method proactively to diffuse conflict; and
- revision of the LOIWMA management plan when that time arrives.

Participants noted that the method should be used sparingly and only for complex issues or matters of significant magnitude. They felt that it would be inappropriate for "no-brainers" because of the substantial investment of time and resources required. We estimated the cost of the Lake Ontario Islands Search Conference to be $17,200. The bulk of expenses were for professional facilitation and the facility (including meals). Additional expenses included supplies, printing, postage, telephone, and travel. In addition, coordination of a search conference requires the allocation of staff time to make contacts, organize meetings, and produce support materials.

Conclusion

We found the search conference method to be an effective vehicle to facilitate meaningful participation by stakeholders from local communities in planning for the LOIWMA. The process provided several benefits, including:

- understanding LOIWMA planning in a broader regional context,
- eliciting input from participants with diverse interests and concerns,
- learning among participants about the region, issues, and one another,
- relationship-building,
- enhanced agency credibility,
- concrete actions that can be incorporated in the LOIWMA plan,
- concrete action steps for broader community initiatives,
- and interest in ongoing collaboration demonstrated by participants' desire to re-convene.

We attribute these benefits not only to inherent strengths of the process, but also to the substantial care taken in its appropriate design through the involvement of the steering committee, purposeful selection of participants, and careful attention to a variety of details that contributed to its success.

The search conference is one of many processes that an agency might consider for stakeholder involvement. Selection of any citizen participation process should be based upon an assessment of the situation (Chase 2000). Research conducted in conjunction with the Lake Ontario Islands Search Conference examined characteristics of the process that contributed to learning among participants and explored how learning can contribute to the development of collaborative resource management (Chapter 3). This understanding can help managers to design context-specific processes that foster common purpose and collaborative relationships by advancing learning.

The Lake Ontario Islands Search Conference was not a one-time intervention, but rather one component of an ongoing agency effort to foster collaborative management with local communities. The search conference provided a valuable component upon which NYSDEC, other agencies, and community leaders can build to realize an ideal future that includes a strong economy, vibrant communities, and a healthy natural environment.

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CHAPTER THREE

UNDERSTANDING SOCIAL LEARNING AND ITS CONTRIBUTION IN DEVELOPING COLLABORATIVE NATURAL RESOURCE MANAGEMENT

> "A compelling approach to environmental issues demands . . . the capacity to facilitate and engage in social learning in an ecological context. Environmental issues feature high degrees of uncertainty and complexity, which are magnified as ecological systems interact with social, economic, and political systems. Thus we need institutions and discourses which are capable of learning – not least about their own shortcomings." – John S. Dryzek, *The Politics of the Earth* (1997:198)

Introduction

Several authors describe the need for greater deliberation (Mathews 1994, National Research Council 1996, Chess et al. 1998, Forester 1999) among citizens to form public judgment (Yankelovich 1991) on a variety of pressing issues, such as education, welfare, environmental protection, criminal justice, and health care. In the field of natural resource management, citizen participation is occurring with greater frequency in a plethora of forms. Underlying the growing emphasis on citizen participation are the tenets of democracy and learning. This inquiry focused on the latter and, in particular, the role of *social learning* in the development of collaborative natural resource management in New York's Eastern Lake Ontario Basin (Figure 3.1).

Social learning is increasingly cited as an essential process for addressing the complexity and uncertainty involved in natural resource management (Lee 1993, Röling and Wagemakers 1998). "A more sustainable conservation, with all its uncertainties and complexities, cannot be envisaged without all actors being involved in continuing processes of learning" (Pimbert and Pretty 1995:28). Yet, a common conceptual understanding of social learning is lacking. Parson and Clark (1995:429) explain, "The term *social learning* conceals great diversity. That many researchers

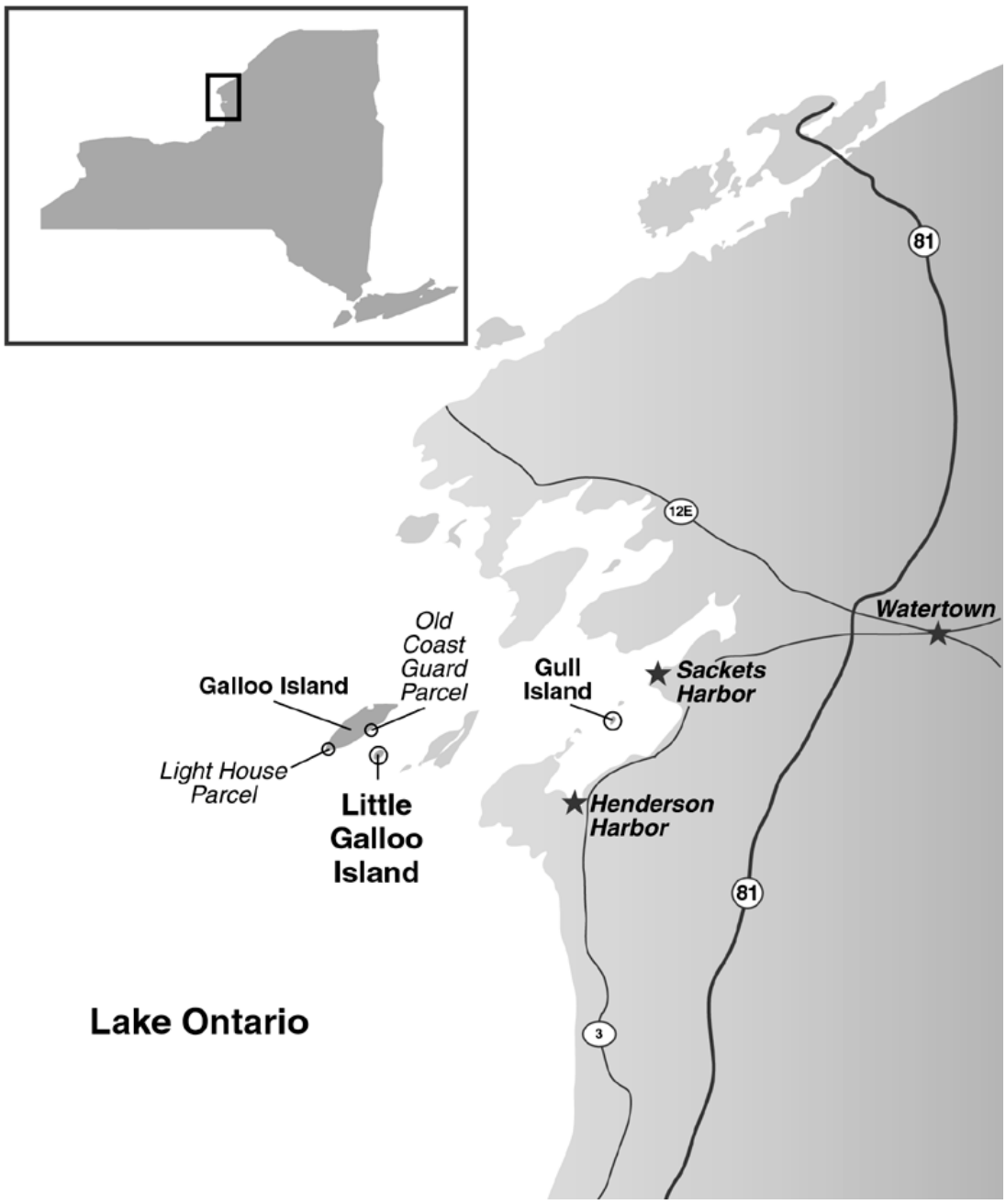

Figure 3.1. Location of the Lake Ontario Islands Wildlife Management Area (LOIWMA) in New York's Eastern Lake Ontario Basin.

describe the phenomena they are examining as 'social learning' does not necessarily indicate a common theoretical perspective, disciplinary heritage, or even language."

In addition to the need for theoretical development, inquiry around social learning can also contribute to improved practice in natural resource management. Public participation plays an increasingly central role in natural resource management; yet, "there is little systematic knowledge about what works in public participation or other deliberative processes" (Chess et al. 1998:45). This research, a cooperative effort with the New York State Department of Environmental Conservation (NYSDEC), investigated how an agency can encourage collaborative resource management through a deliberative planning process fostering learning among participants. The research occurred in conjunction with a search conference (Chapter 2) – a participatory process that engaged diverse stakeholders from local communities in planning for the Lake Ontario Islands Wildlife Management Area (LOIWMA) located in the Eastern Lake Ontario Basin (Figure 3.1). The results of this inquiry provide insight into what does work in public participation and deliberative processes. Furthermore, they enhance understanding of the role social learning can play in the development of community-based co-management.

We explored how social learning occurred among participants in a participatory planning process by analyzing what participants learned (i.e., outcomes) and how they learned (i.e., processes). We identified eight characteristics of deliberative processes that enable social learning: open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and facilitation. We explain each of these attributes by integrating theoretical discussion with empirical evidence from the LOIWMA planning experience. Understanding process attributes that facilitate learning can aid managers in practice by informing the design of

participation processes that empower action and enhance public learning rather than fuel resignation and rationalize decisions already made.

We also explored the role of social learning in the development of community-based co-management by analyzing its contribution in two important domains: identification of common purpose and transformation of relationships. We utilized qualitative inquiry to gather evidence supporting or refuting the following hypotheses:

c) Deliberation that enables social learning contributes to the identification of common purpose.

d) Deliberation that enables social learning contributes to the development of collaborative relationships.

We found that social learning contributes to both common purpose and collaborative relationships. Social learning can enhance the information, both biological and social, available for management. However, more importantly, it plays an essential role in determining the purpose of management, which guides management decisions and actions. Social learning also involves participants learning about one another, new ways of interacting, and possibilities for working together. Social learning enhanced participants' willingness to be involved in future collaborative efforts by building upon their existing commitments to their professions and communities and their personal connections to Lake Ontario and the Eastern Basin region.

Social Learning Contributes to Co-management: A Conceptual Framework

Co-management -- also called collaborative, cooperative, participatory, joint, or multi-stakeholder management -- has been applied in the management of fisheries, parks and protected areas, forests, wildlife, rangelands, and water resources (Conley and Moote 2001). Proponents of co-management describe numerous potential benefits

when compared with management by a single, central agency. These include increased effectiveness of management, greater acceptability and legitimacy of management actions, enhanced knowledge and understanding of natural and human systems, increased trust between government agencies and stakeholders, reduced enforcement expenditures and lower transaction costs, and increased public awareness of conservation issues, among others (Pinkerton 1989, Borrini-Feyerabend 1996).

The term "co-management" has been used to describe diverse management arrangements that can be conceptualized as a continuum along which partners participate to varying degrees (Pinkerton 1994, Borrini-Feyerabend 1996, Sen and Nielsen 1996, Pomeroy and Berkes 1997). In any given context, co-management is a dynamic, evolving process that may shift from one point on the continuum to others over time. This research focused on *community-based co-management*, which refers to *a partnership in which governmental agencies and local communities (including resource users, local governments, non-governmental organizations, and other stakeholders) negotiate and share, as appropriate, the responsibility for management of a specific area or set of resources* (adapted from IUCN 1997).

Our review of scholars' analyses of "successful" co-management arrangements revealed at least seven requisites for community-based co-management (Chapter 4): common purpose, collaborative relationships and trust, appropriate processes, appropriate structures, capacity, knowledge and information, and supportive policy. This inquiry examined how social learning contributes to two of these requisites: the identification of common purpose and the development of collaborative relationships (Figure 3.2).

Several authors emphasize the need for learning to develop collaborative resource management. In reference to fisheries co-management, Pinkerton (1994:2374) claims, "Success is more likely if a social learning process occurs among

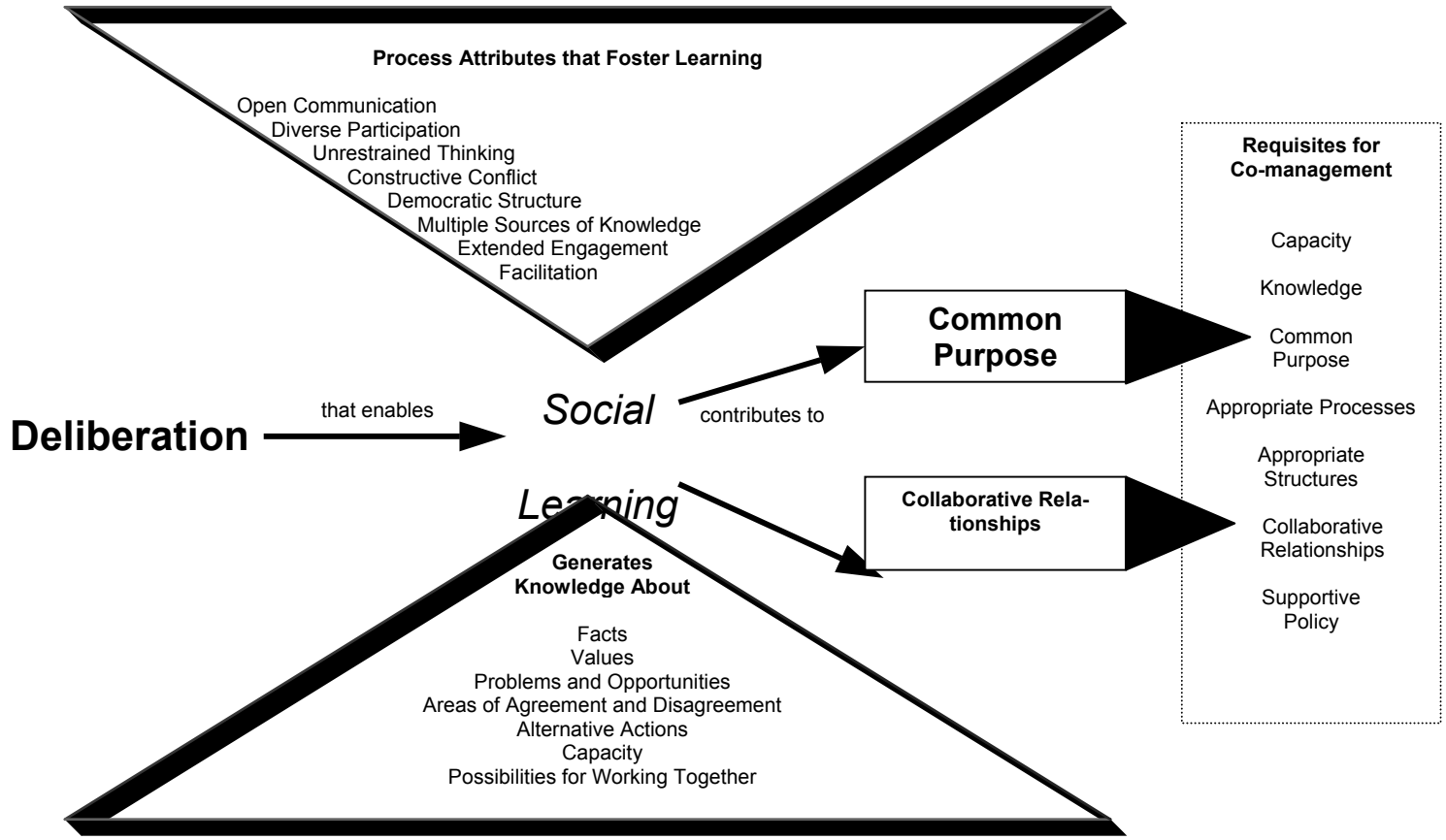

Figure 3.2. Deliberation that enables social learning contributes to the development of community-based co-management through the identification of common purpose and development of collaborative relationships.

different stakeholders. … Social learning occurs when parties learn to redefine situations in terms of what they can achieve collaboratively. This involves not only a restructuring of perception, but also a willingness to take actions co-operatively with parties previously considered unknown and/or untrustworthy." Borrini-Feyerabend and colleagues (2000:12) assert that interactive learning, which they define as "enhancing common knowledge, awareness and skills by thinking, discussing and acting together," is "crucial for co-management initiatives." Wondolleck and Yaffee (2000:132) state that a key step in collaborative initiatives is "committing to a process of mutual learning in which participants agree that they individually do not have all the answers."

What is social learning and how does it occur? Röling and Wagemakers (1998:64) describe social learning as "a framework for thinking about the knowledge processes that underlie societal adaptation and innovation" and refer to it as a society-wide process (i.e., not limited to scientists, experts, or intellectuals) in which social actors learn to adapt through discourse and political action. They stress that "meaningful interaction and communication between individuals is central to social learning" (Röling and Wagemakers 1998:65). For the purposes of this research, we defined social learning as *learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action.*

One mechanism through which social learning can occur is deliberation. Deliberation describes one of several genres of general processes, such as communication or education, through which agencies can interface with the public. Deliberation includes any formal or informal process to communicate, raise and collectively consider issues, increase understanding, and arrive at substantive decisions (NRC 1996). Deliberation can refer to a wide variety of processes from

public hearings to alternative dispute resolution techniques. Deliberative processes can succeed or fail, empower action or fuel resignation, enhance public learning and democratic practices or rationalize decisions already made. Forester (1999:63) explains:

> Hardly mere process, these deliberations can reproduce public imagination or blindness, public hope or cynicism … They might strengthen citizens' capacities to listen and engage one another, or they might instead degenerate and encourage the all-too-common intransigent public hearing postures of 'decide-announce-defend': 'First I'll decide what I want; then I'll announce it; and then I'll defend it!'

All too often, public participation processes fuel resignation among citizens who feel that their input is too little, too late. This inquiry sought to identify characteristics of deliberation that would enhance learning and empower action. We identified eight such characteristics. These include open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and good facilitation (Figure 3.2). In the results below, we further explain each of these process attributes and illustrate their application in practice through empirical evidence from the LOIWMA planning experience. By incorporating these characteristics in the design of deliberative processes, natural resource managers can create valuable opportunities for social learning among stakeholders and between stakeholders and agency staff.

Social learning enhances the knowledge available for community-based co-management. Scientific knowledge is essential to sound natural resource management. However, scientific knowledge alone is not sufficient, especially given the increasing diversity of stakeholder interests in resource management (Wondolleck and Yaffee 2000). Determining management goals requires another type of knowledge – a knowledge that reflects public values, providing purpose and guidance

for policy and action (Yankelovich 1991). When deliberation enables social learning, individuals and/or groups evolve in their understanding of issues, relevant facts, problems and opportunities, areas of agreement and disagreement, and – perhaps most importantly – their own values and those of others (Yankelovich 1991, Mathews 1994, NRC 1996). These all contribute to the identification of common purpose, which provides guidance for co-management initiatives.

Social learning also facilitates co-management through the transformation of relationships. Pinkerton (1989:29) proposes that "the successful operation of co-management ultimately rests on the relationships among human actors." Social learning contributes to collaborative relationships by creating new relationships, building upon cooperative relationships, and transforming adversarial ones. This occurs as people learn about the character and trustworthiness of others and develop new networks and norms of interaction that can enhance their capacity for joint action (Greenwood and Levin 1998, Forester 1999). Social learning involves what Forester (1999) terms "diplomatic recognition" – recognizing that others' interests are as legitimate as one's own. Mathews (1994:235) explains, "… *deliberation doesn't necessarily change personal positions, but it does change attitudes about opposing points of view* (emphasis in original)." This change in attitudes may lead people to see new possibilities for working together that are absent when issues are debated from polarized positions. "The process of deliberation and participation is better seen not only as argumentative or dialogical in terms of who knows what, not only as allocative, in terms of who gets what, *but as transformative too, in terms of who comes to create new relationships and act on new commitments in actual practice* (emphasis added)" (Forester 1999:144).

"Social learning is action orientated. It is intended to help improve the quality and wisdom of the decisions we take when faced with complexity, uncertainty,

conflict and paradox" (Röling and Wagemakers 1998:54). Recognizing the value that social learning could contribute to decision-making around the management of fish and wildlife resources in the Eastern Lake Ontario Basin, NYSDEC took an innovative approach to Wildlife Management Area (WMA) planning in 2000 by engaging diverse stakeholders from local communities in a deliberative planning event, a search conference. This research explored how social learning occurred among participants in the search conference and how that learning contributed to identification of common purpose and development of collaborative relationships.

Human Communities and Natural Resources of the Eastern Lake Ontario Basin

The eastern Lake Ontario islands and adjacent shoals comprise an unique ecosystem that provides important habitat for warmwater fishes, colonial waterbirds, waterfowl, and shorebirds. Four parcels owned by NYSDEC constitute the Lake Ontario Islands Wildlife Management Area (LOIWMA) (Figure 3.1): 43-acre Little Galloo Island, two parcels totaling 20 acres on neighboring Galloo Island, and one-acre Gull Island. The WMA program is part of a long-term effort to establish permanent access to lands in New York State for the protection and promotion of its fish and wildlife resources (NYSDEC Division of Fish, Wildlife, and Marine Resources 2001).

Management planning for the LOIWMA provided an appropriate context to explore a deliberative process for social learning. Management of the islands, which are used as breeding grounds by hundreds of thousands of colonial-nesting waterbirds, affects local communities along the Eastern Basin shoreline that depend economically on sport fishing. The planning occurred within a climate of ongoing controversy over the impact of double-crested cormorants (*Phalacrocorax auritus*) on the sport fishery and alternatives for cormorant management (see Appendix A). The situation involved

complex, value-laden judgements and conflict about the adequacy of scientific knowledge and about basic goals and values (Schusler and Decker 2000). These characteristics called for effective dialogue between technical experts and interested and affected citizens (NRC 1996).

This inquiry involved participants from several shoreline communities in Jefferson County, New York, as well as the urban center of Watertown. In particular, we focused on the waterfront communities of closest geographic proximity to the LOIWMA: Henderson Harbor and Sackets Harbor (Figure 3.1). Henderson Harbor is a waterfront community located in the Town of Henderson, which has a population of 1,377 (Jefferson County 2001), that relies heavily on the economic contribution of warm season recreational fishing. The harbor is also popular for sailing. The outlying Town of Henderson also relies heavily on recreation and tourism associated with fishing and hunting, in addition to some agriculture. The Village of Sackets Harbor has a population of 1,386 and is located in the Town of Hounsfield with a population of 3,323 (Jefferson County 2001). A bedroom community for Watertown, Sackets Harbor is also a thriving tourist community that promotes its historical background and natural beauty.

With declining employment in manufacturing, and agriculture and tourism providing only seasonal income, individuals in communities throughout Jefferson County agreed in interviews conducted during a preliminary situation analysis that the most important issues facing the region were economic (Schusler and Decker 2000). They expressed a desire for economic development that is compatible with preserving the rural character of their communities, quality of life, and the environment. As a tourism professional noted: "[The challenge is in] . . . balancing a respect for and protection of what we still have in environment and unique natural

resources but bringing us up to speed with the rest of the economy in terms of re-developing the region" (Schusler and Decker 2000).

Selection of Methods

The design of any participatory process should be tailored to the needs of the specific situation. "The choice of deliberative methods requires diagnosing the … situation and the nature of the knowledge needed, including the needs of the parties, the technical complexity and history of the issue, the extent of agency commitment, the availability of expertise in deliberative methods, and agency resources" (NRC 1996:96). A variety of techniques can be used in deliberations that inform management decisions. Based upon the results of a preliminary situation analysis (Schusler and Decker 2000), we selected a search conference methodology (in consultation with NYSDEC) because of its intentional design to foster learning among participants (Emery and Purser 1996).

A search conference is a participatory event that enables participants to collectively create a plan and encourages participants themselves to implement it. Collective planning is aimed at solving problems directly relevant to the people involved. Learning and planning are conducted as a seamless process (Emery and Purser 1996). A search conference typically lasts about 2½ days, ideally includes 25-75 participants, and involves a complex interplay between plenary sessions and small group work that creates valuable arenas for dialogue (Greenwood and Levin 1998, Martin and Rich 1998). The Lake Ontario Islands Search Conference occurred November 8-10, 2000 in Henderson Harbor, New York and involved 32 participants representing diverse sectors of local communities.

To gather evidence to support or refute our hypotheses about the role of social learning in the development of community-based co-management, we employed

multiple qualitative inquiry techniques (Table 3.1). A team of four researchers observed (Adler and Adler 1994) interactions among participants during the search conference. An observation guide (Appendix C) focused researchers' attention on evidence of learning as well as process attributes and group dynamics. The team of four researchers enabled one observer to be present in every small group activity and provided multiple perspectives in observation of large group work. Additional data were collected through a mid-conference evaluation instrument (N=25) and an evaluation instrument (N=22) completed by participants at the conclusion of the conference (Appendix C).

To confirm or refute researchers' interpretations and to gain participants' own interpretations of the search conference experience, we conducted structured telephone interviews (Appendix C) with participants between December 11 and 22, 2001, approximately one month following the event. We interviewed 29 of the 32 participants. Three participants were unavailable due to travel and retail obligations during the interview period. However, our conversations with those individuals during and after the search event suggested that their perspectives on the search conference were not dramatically different from those of participants we interviewed. We utilized Folio Views software to organize interview data.

In analysis of data from observation of the search conference, evaluation instruments, and post-search conference telephone interviews, we examined evidence that supported or refuted the proposed conceptual framework described above. Analysis also sought to identify additional elements missing from this framework. Our goal was to refine the conceptual framework based upon the experience of management planning for the LOIWMA. We present those results below.

Table 3.1. Methods of data collection and analysis in support of research objectives.

Data collection	Analysis	Research objectives
➢ Observation of search conference (by 4 observers) ➢ Mid-conference evaluation instrument (N=25) ➢ End-of-conference evaluation instrument (N=22) ➢ Structured telephone interviews with participants one month after conference (N=29)	➢ Application of theoretical framework in search of evidence to support or refute proposed theoretical construct	➢ Identify characteristics of deliberative processes that enable social learning ➢ Assess how social learning occurs among participants in search conference ➢ Examine how social learning contributes to identification of common purpose ➢ Examine how social learning contributes to development of collaborative relationships

Evidence of Learning

Participants reported learning about facts, the concerns of other participants, areas of agreement and disagreement, problems and opportunities, and actions that might address problems or capitalize on opportunities (Table 3.2). Participants gained a better understanding of issues associated with the islands' management, including learning about the fish and wildlife resources as well as potential community benefits, such as developing safe harbor or diversifying tourism promotion around bird-watching, lighthouse viewing, and paddling sports, for example. Most importantly, all 29 individuals interviewed by telephone following the event reported that they learned

about the concerns of other participants to a moderate or great extent. The following statements illustrate:

> "I was surprised at how many different entities had concerns, with totally different connections to the water." – charter guide
>
> "It opened my eyes to see where other people are coming from, different points of view." – biology teacher
>
> "Hearing first hand the concerns of the fishing guides … it became more real and human than reading about the issue in the news." – extension agent
>
> "My horizons expanded in the area of concerns. Things that I had little or no knowledge of are now concerns." – business executive
>
> "I gained an increased understanding of their issues and hope that they got an increased understanding of mine." – environmentalist

About half of participants (15) reported that the search conference experience altered their *own* concerns related to natural resource management in the Eastern Basin. In most cases, it expanded the types of concerns that participants considered in their views toward management beyond their own primary interests.

Twelve participants reported learning about the presence or lack of resources (human and financial) available to their community. Several participants were already aware of such resources due to their professional positions or roles as community leaders. Others were impressed with the human resources present within the group itself. Some noted the willingness of private individuals to assist with implementation of actions identified during the search conference. A county planner: "People in the private sector that said they were willing to help were themselves a resource." Others came to recognize NYSDEC less as a regulator and more as a resource to communities. An attorney: "DEC and others are often perceived as the enemy. [The search conference] clarified as related to these topics that they are a real resource."

However, some participants felt that actions identified during the search conference may be difficult to implement due to a lack of funds available to the agency and communities. An education specialist: "As always, a lack of funds may impact the situation."

Deliberation includes the careful weighing of consequences of various options for action (Mathews 1994, NRC 1996) so that people "have engaged an issue, considered it from all sides, understood the choices it leads to, and accepted the full consequences of the choices they make …" (Yankelovich 1991). Unlike some planning processes (e.g., the Tillamook Bay National Estuary Project in Gregory 2000), the search conference design does not include weighing consequences of alternative management options. Often, actions identified are not mutually exclusive and may even be complementary. Thus, we did not ascertain the extent to which participants learned about the consequences of proposed actions, although such learning may be necessary before certain actions are initiated. We also did not ascertain the extent to which participants learned about the management process. Learning about the processes through which management decisions are made could be another valuable outcome of deliberation and is an area requiring additional investigation.

Table 3.2. Number of participants who reported learning to a moderate or great extent.

N=29	Moderate or Great Extent
To what extent did you learn new factual information?	26
To what extent did you learn about the concerns of other participants?	29
To what extent did participating alter your own concerns related to natural resource management in the Eastern Basin?	15
To what extent did participating help you see areas in which you agree or disagree with others?	23
To what extent were problems or opportunities identified that you were not previously aware of?	22
To what extent were actions identified to address problems or capitalize on opportunities?	25
To what extent did you become aware of the presence or lack of resources available to your community?	12

Common Purpose

Most participants (27) agreed that the search conference contributed to the identification of common purpose (Table 3.3). When asked to describe that purpose, participants' generally stated one or more of the following themes:

- protection of natural resources whether for environmental, recreational, or economic benefits;

- greater community cooperation, regional planning, and collective management of the Eastern Basin;
- resource management that meets diverse interests; and
- working together to address these issues.

Several participants expressed surprise at the degree to which common ground existed among individuals with diverse interests in resource management. A tourism planner observed, "People found they had more common ground than anticipated." A community development professional described the common purpose as, "The same but different. Everyone understood the overall purpose of protecting the basin and maximizing use and promotion in a sensitive way." He added that the group identified several ways to address this, including actions related to recreation, economic development, zoning, land use, and habitat protection. "The common denominator is to protect and yet use the resources." A businessperson said that no common purpose was identified at all; rather, "It was the diversity that was exposed."

Table 3.3. Number of participants that felt the search group identified a common purpose to a moderate or great extent.

N=29	Moderate or Great Extent
To what extent did participants identify a common purpose during the search conference?	27

Collaborative Relationships

The development of collaborative relationships can occur in three ways: strengthening existing healthy relationships, transforming adversarial relationships, and creating new relationships (Table 3.4). Most participants reported that their

existing relationships with others did not change as a result of participating in the search conference. Those who did experience changes (9 participants) described re-establishing relationships, strengthening relationships between the public and private sectors, and generally getting to know others better through discussion and time spent together. In one case, the process helped improve an adversarial relationship between two individuals with opposing views on cormorant management. One of them explained, "I sat at the table with one of the cormorant killers. There was give and take. And at the end, he smiled and kind of patted me on the arm and I did the same." No existing relationships were weakened as a result of participating in the event.

Several participants (17) created new relationships (Table 3.4). For some this merely involved exchanging business cards or placing a face with the voice at the other end of the phone. For others it involved gaining greater familiarity with one another, working together, exchanging opinions, and learning about others' points of views. Collaborative relationships require trust. Twenty-four participants reported that through the search conference they gained trust in others to a moderate or great extent (Table 3.4). A county planner reflected, "The group as a whole was more trustworthy than I might have thought." A few participants responded they did not gain trust in others because they already trusted them prior to this experience.

Table 3.4. Number of participants who reported building relationships with others.

N=29	Yes
Did your existing relationships with other participants change?	9
	Moderate or Great Extent
To what extent did you form new relationships with other participants?	17
To what extent did you gain trust in other participants?	24

Process Elements that Contributed to Learning

The above evidence demonstrates that social learning occurred among participants in the Lake Ontario Islands Search Conference. We further sought to understand *how* social learning occurred in this deliberative planning event. What specific attributes of the process contributed to learning among participants? Analysis of our observations and participants' reflections indicated that learning was enabled through open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and facilitation.

Open communication

"Learning occurs when an individual enters a process of reconciling newly communicated ideas with the presuppositions of prior learning" (Cranton 1994:27). Communication that fosters learning requires dialogue – as opposed to monologue – that is free from domination and distortion (Habermas in Yankelovich 1991). Working together in small groups provided the best opportunity for dialogue among participants. A community development professional who participated explained that small group work was "the best way to get to know people and what they think." An environmentalist observed, "[The groups were] small enough that you felt comfortable talking. People weren't allowed … to meter or filter what others were saying. … People felt free to disagree." Participants emphasized *mutual respect*, *listening*, and *open-mindedness* as essential to developing collaborative working relationships and enhancing trust.

Diverse participation

"Deliberation … brings into consideration knowledge and judgments coming from various perspectives so that participants develop understandings that are informed by other views. At its best, deliberation becomes an interactive learning process for those involved" (NRC 1996:74). Although the search group lacked demographic diversity (for example, the group included only 5 women and no one below the age of 30), participants reflected a broad and varied range of interests in natural resource management (Table 3.5). This diversity was achieved through the purposeful selection of participants using a "community reference system," a process that is similar in concept to snowball sampling. A tourism specialist reflected, "[I was] amazed at the diversity of people there and the diversity of opinions."

Table 3.5. Diversity of stakes reflected among participants at the Lake Ontario Islands Search Conference.

➢ Birders ➢ Business owners ➢ Charter boat captains ➢ Community development professionals ➢ County planners ➢ Educators ➢ Environmentalists	➢ Extension agents ➢ Kayakers/paddling enthusiasts ➢ Local government officials ➢ NYSDEC staff ➢ Recreational anglers ➢ State parks staff ➢ Tourism professionals

This diversity enhanced learning by exposing participants to other points of view. Learning about the variety of interests in the Eastern Basin's natural resources led participants to recognize the legitimacy of views other than their own. An economic development professional learned that "the interests were multiple and varied, and how dedicated each was to their cause." A business executive explained that the building of trust occurred through, "[The] sense that others … the amount of

information they had regarding their own positions. They were able to establish their position – one that I felt didn't exist before. They were well-informed, able to intelligently and professionally project their opinions. It was very well done. Everyone was very professional and there are certainly people at the opposite end of the pole here."

Learning about issues beyond their own immediate concerns also increased participants' appreciation for the complexity of management. They realized the challenge of integrating these multiple and varied interests in management planning. In some cases, by learning about one another, participants realized that more possibilities may exist to work together than they had previously imagined. An environmentalist reflected, "I found common ground with a lot of fishing people and did not think that I would. … We have issues that could be compatible and [we're] willing to explore economic components as long as they're not adverse to a native fishery. It surprised me to learn that they're not [necessarily] adverse to a native fishery." In a similar vein, a marina owner said, "Someone from the [environmental organization] was there that admired the birds. When cormorant control was brought up, he didn't have a negative viewpoint. [This] surprised me tremendously. It was what can we do to meet all needs … [this was] one big thing I was so pleased to hear."

Unrestrained thinking

Often, resource managers request stakeholder input into a specific issue, such as cormorant management, or a specific objective, such as the desired size of the local deer population. In contrast, during the search conference, participants considered the system of focus, the islands, within their broader environment, the Eastern Basin. Doing so led participants to focus on the impacts (Decker et al. In review) or ultimate

goals of management, which included sustaining a healthy environment, economy, and community. NYSDEC's regional director recognized participants' efforts:

> [You've] covered much ground, everything from community planning to ecosystem management. People look at those things as very separate and distinct planning efforts but actually they're very integrated. This is probably the best effort I've ever seen to begin to integrate those things such that the community can benefit and we can benefit in protecting the resources.

Creating a shared history (Figure 3.3) together laid the groundwork for creative, unrestrained thinking. Participants depicted along a chronological timeline major events and forces that had influenced the region. Asking participants to step back before going forward and to look broadly before focusing narrowly deliberately distracted them from their own narrowness of focus and enabled them to learn in ways otherwise prevented (Forester 1999). A retailer explained how the identification of common purpose came about: "It seemed to be there from almost the beginning … the timeline showed them all how they got where they are, both by seeing mistakes from the past and realizing what they still had that they didn't want to lose."

Discussion of the timeline emphasized a shared sense of place (Kruger and Shannon 2000). A participant proposed, "Let's think about what our community is. A community is not the geo-political boundary of a town. I think we're saying the community is the lakeshore." The shared history also revealed intricate links between the region's natural, historical, and cultural resources and a tourism-based economy. It further became evident that everyone in the room had relevant knowledge to contribute in its creation. Finally, discussing the shared history also began surfacing areas of agreement and disagreement.

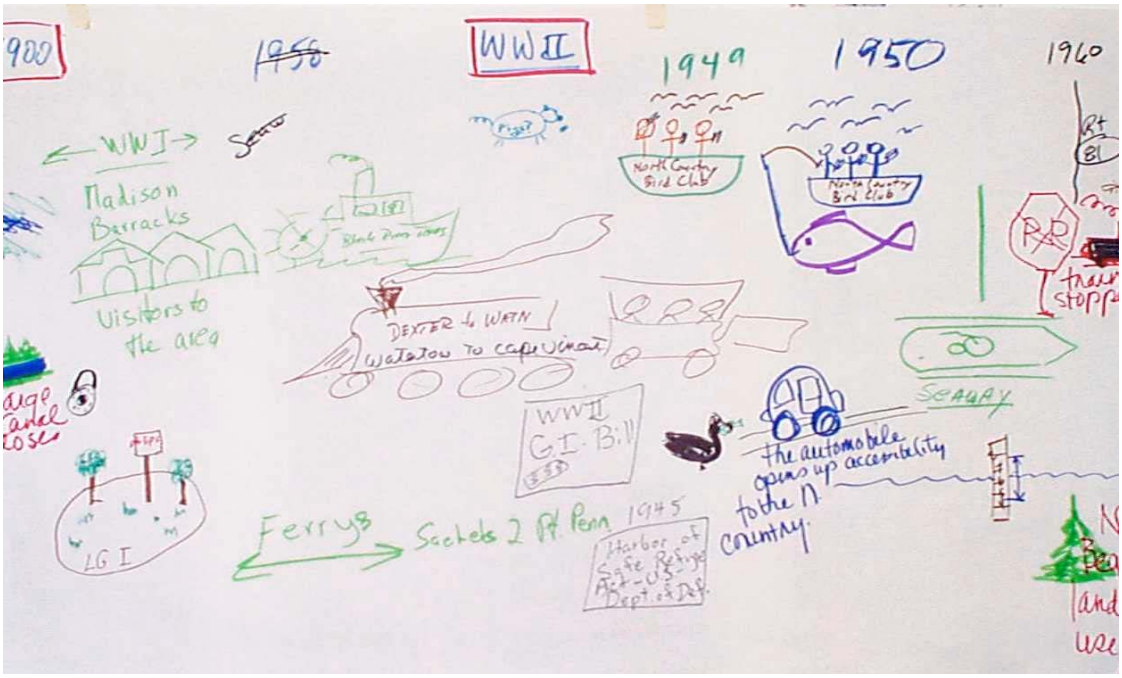

Figure 3.3. Participants created a shared history by depicting in pictures and words along a chronological timeline major events and forces that had influenced the region.

Constructive conflict

"Rather than striving for consensus, a Search Conference focuses on identifying common ground … [The] process seeks to differentiate the points where participants agree – the area of common ground (which is normally much larger than expected) – from the points that evoke clear disagreement or irreconcilable difference" (Emery and Purser 1996:39). Doing so enabled participants with opposing views on cormorant management to progress in areas of common ground, such as education and tourism. A marina owner: "People who I've seen flare up before, might have raised their voices, but it never got out of hand. I saw people talking with each other who I didn't think talked." A sportswoman: "[We were] able to talk about areas of

fundamental disagreement. Although [we] continued to disagree, [we] gained a lot of respect for one another." An education specialist: "[My] concerns were lessened about how the conference might end up being just a cormorant/anti-cormorant debate. … [I] found that people were more broad-minded. … There was a willingness to see other options for tourism, recreation, and economic growth in the area."

The search conference process was not a mechanism for conflict resolution but neither did it ignore conflict. Rather, participants identified areas in which they agreed and disagreed with others (Table 3.2). On the mid-check evaluation form, nearly all participants reported that when their ideas differed from others, they expressed those ideas. Furthermore, they felt that when they did express different perspectives or points of view, those ideas generally were discussed, recorded, and incorporated into the work product or, if not accepted, were at least well considered. One participant, however, felt that at least in one instance the "larger group didn't get it."

Democratic structure

The search conference followed a structured sequence of activities (Figure 3.4). However, within each of these activities, participants themselves guided the direction of the process by determining the content of discussion and deciding upon priorities to be addressed in action planning. Such a process of "structured unpredictability" (Forester 1999) required the agency to recognize that it did not know a priori everything that would be relevant to citizens nor what options would be discovered in the process of listening and responding to each other. Some public meetings are so structured, predictable, and predetermined that little if any learning occurs. In contrast, the democratic structure of the search conference allowed for surprise – an essential element of learning (Forester 1999) – and the exploration of new possibilities for working together.

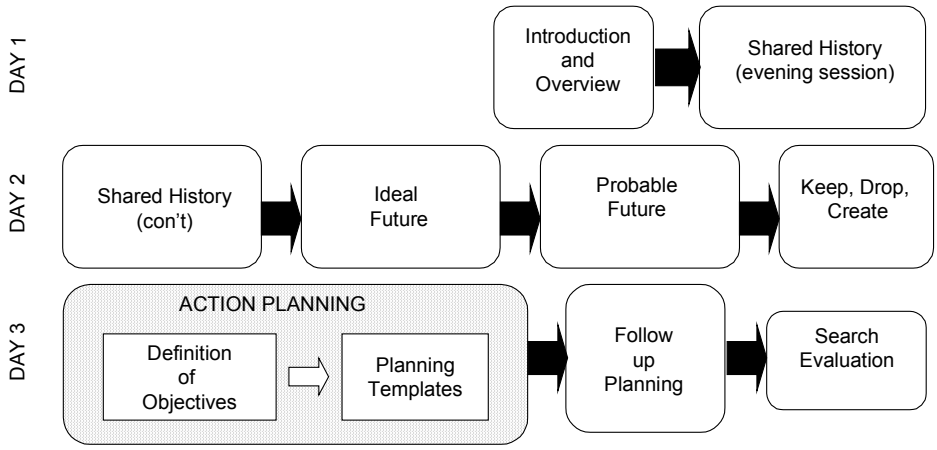

Figure 3.4. Stages of the Lake Ontario Islands Search Conference. Adapted from Martin and Rich (1998).

Multiple sources of knowledge

"Social learning … relies on a process that, by combining two kinds of knowledge – personal and theoretical or 'processed' knowledge – yields an understanding greater than either could have produced by itself" (Friedmann 1984:192). In the search conference, "each participant attends because of their potential for contributing knowledge and expertise about some piece of the overall puzzle" (Emery and Purser 1996:35). Fish and wildlife managers from NYSDEC did not serve as technical experts but rather were full participants in the same vein as all others. This was important for two reasons. First, fish and wildlife managers provided valuable information about the Eastern Basin's natural resources, while other participants shared equally relevant knowledge from their own experiences about the region's natural resources, history, culture, and local economies. Second, identifying

common purpose required agreeing upon shared ideals (Emery and Purser 1996), which could not be evaluated using technical and scientific knowledge alone.

Extended engagement and informal interactions

Working together over the course of 2½ days offered participants the opportunity to engage in greater depth than permitted in meetings of shorter duration. Several participants attributed the development of collaborative relationships and building of trust to the "… format where we stayed working with people all day long through work sessions, [both] large group [and] small group." A NYSDEC participant explained, "[I] knew what stakeholder group they were from to start with and had dealt with them before, but over 2½ days, especially in the small groups, [I] got a much better understanding of their true feelings."

Participants also learned about one another on a more personal level during informal interactions over meals and breaks. Such informal encounters "… enable participants to develop more familiar relationships or to learn about one another before solving the problems they face" (Forester 1999:131). An environmentalist described, "A biologist, fisherman, tourism [specialist], and tree hugger like myself all sat around the table together at dinner talking." An extension agent reflected, "The whole format was useful. The time taken to build rapport and trust where there was some suspicion resulted in a community that will accomplish something."

Facilitation

Participants also confirmed the value of good facilitation. Professional facilitators from Cornell University's School of Industrial and Labor Relations managed the search conference. A local government official: "[The] facilitators were excellent." The involvement of a neutral entity in this role lent credibility to the

process. Participants themselves facilitated small group work with guidance from the search managers.

These characteristics of the deliberative process – open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and facilitation – created a comfortable atmosphere in which participants could share diverse views and opinions, respectfully question each other, and explore complex and challenging issues with sensitivity and humor.

"Mistaken Learning"

Not all learning is positive. On occasion, participants learned incorrect information or developed negative perceptions of others, which could impede collaborative relationships. NYSDEC participants sometimes observed others sharing incorrect information about fish and wildlife resources; however, the process did not always provide appropriate opportunities for agency staff to correct inaccuracies. Inaccurate information seemed most prevalent during discussions of ecosystem management, an area in which participants disagreed about the prominence that cormorant management should receive relative to other components of the ecosystem. These observations emphasize the need for social learning as a continually evolving process involving iterative deliberative opportunities in which participants can correct misinformation and misunderstandings as well as adapt management goals and collaborative initiatives as they gather new information and learn from experience.

Deliberation could impede the development of community-based co-management when interactions produce or confirm negative perceptions of other stakeholders. We found this on rare occasion in participants' comments during telephone interviews following the search conference. An education specialist "gained

first hand knowledge of the hate and misinformation concerning cormorants." A charter guide stated, "I found the … bird people to be very touchy and not open to discussion on the cormorant issue. They seemed closed to open discussion about physically doing something about the birds. Most of us in favor of control are willing to listen more." Despite these negative impressions, both participants anticipated being further involved in actions identified during the search conference.

In any deliberative process, the risk exists that more powerful interests may co-opt those who are less powerful. Pelletier and colleagues (1999:103) found that "local deliberative processes may produce outcomes that are neither fair nor efficient and that reflect the values and interests of certain stakeholders more than others, even in the absence of overt conflict." Such outcomes may occur when the values and interests of some parties are "subordinated, knowingly or unknowingly, to those of more powerful, articulate or persuasive actors" (Pelletier et al. 1999:105). A marina owner described behavior that could be a symptom of co-optation: "People seemed to go out of their way to agree even though some participants had strong feelings on one side of an issue." However, aside from this single observation, we have no evidence that co-optation was a concern during the Lake Ontario Islands Search Conference.

Does Learning Yield Action?

Twenty-four participants stated that they intended to remain involved in actions identified during the search conference (Table 3.6), generally in that area in which they participated in action planning (i.e., community planning and cooperation, ecosystem management, education, recreational resource use, or sustainable resource-based tourism). Those who did not intend to stay involved either cited a lack of time or viewed themselves as a resource to others but not as a primary participant in implementation of actions.

Table 3.6. Number of participants who anticipated future involvement in actions identified during the search conference to a moderate or great extent.

N=29	Moderate or Great Extent
To what extent do you anticipate being involved in actions initiated during the search conference?	24

Participants' motivations for continued involvement stemmed from their professional positions, roles as community leaders, and personal ties to the region. A tourism planner: "It's my job." A charter guide: "It's my neighborhood and livelihood." A business owner: "Trying to solve problems. There are no financial aspects, just trying to solve problems and promote tourism." A charter guide: "I live, work, and depend on the lake and the shorefront for my living, my home, everything." Social learning that occurred during the search conference built upon participants' existing commitment to their communities to generate enthusiasm about the possibilities for working together. An educator: "[Participating in the search conference] strengthened my concern to do something." The tourism planner above added that "seeing others enthusiastic about helping and willing to work" contributed to his own willingness to be further involved in actions identified during the search conference.

Participants' demonstrated their intent to remain involved in actions identified during the search conference by attending a follow-up meeting held in May, 2001 in Chaumont, New York. Nineteen of 32 participants attended. Nearly all of the 13 participants who were unable to attend the follow-up meeting expressed interest in remaining informed and involved in ongoing efforts. Several actions identified during

the search conference were incorporated by NYSDEC into a draft management plan for the Lake Ontario Islands Wildlife Management Area. In addition, some participants had begun implementing short-term actions or gathering information for long-term goals in the areas of education and tourism. However, at the meeting's conclusion, it remained unclear how the group would continue working together. A weakness of the search conference design that became clear during the follow-up meeting was the failure to identify a local change agent, aside from NYSDEC, early on in the process. As a result, no one has yet stepped up to lead further actions on community-based initiatives identified during the search conference.

Observation of the follow-up meeting emphasized that social learning is essential but not sufficient for collaborative resource management. Appropriate structures and processes are needed to sustain learning and enable joint action. Developing these local institutions will require leadership and a commitment of human and financial resources. At this point, despite participants' enthusiasm to continue working together, it is unclear what entity in the Eastern Basin region might provide the organizational capacity to facilitate further collaborative efforts.

Conclusion

We identified eight characteristics of deliberative processes that fostered social learning among participants: open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and facilitation. Incorporating these attributes into the design of stakeholder involvement processes can create opportunities for people to engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action.

Evidence from the experience of participatory planning for the LOIWMA suggested that social learning contributes to the identification of common purpose and development of collaborative relationships, two requisites for community-based co-management of natural resources. Learning is necessary but not sufficient for the development of collaborative resource management. Social learning may be a process by which other requisites for co-management, including capacity, appropriate processes, appropriate structures, and supportive policies, could also be developed or negotiated.

This inquiry examined social learning within the context of a deliberative planning event involving 32 participants. Research that investigates how social learning occurs at higher levels of social aggregation is also needed. Röling and Wagemakers (1998:68) explain, "*Very little is known about these processes at higher levels of aggregation*. Such knowledge is important for activists, politicians and policy makers. Of special interest is a better understanding of the role of *education, media and communication technology* (emphasis in original)." In addition, future research in the Eastern Basin should explore the sustainability of the energy and activity generated during the search conference. For example, what local institutional structures are needed to sustain action? What processes of deliberation, communication, and education are necessary for ongoing learning? And, how does social learning diffuse through the broader community?

As Wondolleck and Yaffee (2000:224) state, "An agency's long-term capacity for collaboration requires ongoing experimentation and an explicit process of learning from the experiments." The Lake Ontario Islands Search Conference provided an initial step in learning about the potential for collaboration between NYSDEC and local communities in the Eastern Basin of Lake Ontario. We hope it serves as a foundation for ongoing efforts among participants to learn further about the place they

share, one another, and possibilities for working together toward a desirable common future.

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CHAPTER FOUR

COMMUNITY-BASED CO-MANAGEMENT IN NEW YORK'S EASTERN LAKE ONTARIO BASIN: ADDITIONAL CONSIDERATIONS

Introduction

Michael (1996:484) describes two kinds of learning, one for a stable world and one for a world of uncertainty and change: "Learning appropriate for the former has to do with learning the right answers … Learning appropriate for our world has to do with learning what are the useful questions to ask and learning how to keep on learning since the questions keep changing." Engaging stakeholders from local communities in this latter kind of learning is a cornerstone of community-based co-management. This research investigated the role of social learning in the development of collaborative resource management between the New York State Department of Environmental Conservation (NYSDEC) and local communities along the shore of the Eastern Lake Ontario Basin.

Through analysis of data collected by observation of the Lake Ontario Islands Search Conference, evaluation instruments, and interviews conducted with participants after the search conference, I identified at least eight characteristics of participatory processes that foster learning. These are open communication, diverse participation, unrestrained thinking, constructive conflict, democratic structure, multiple sources of knowledge, extended engagement, and facilitation. By incorporating these elements in the design of participatory processes, natural resource managers can facilitate social learning, which refers to *learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action*.

In addition, results of this research suggest that social learning contributes to the development of community-based co-management through the identification of common purpose and transformation of relationships. While social learning is necessary to develop collaborative resource management, it is not sufficient. Common purpose and collaborative relationships are two of several requisites for successful co-management. In this chapter, I discuss additional requisites for community-based co-management (Figure 4.1), suggesting areas of focus for additional inquiry.

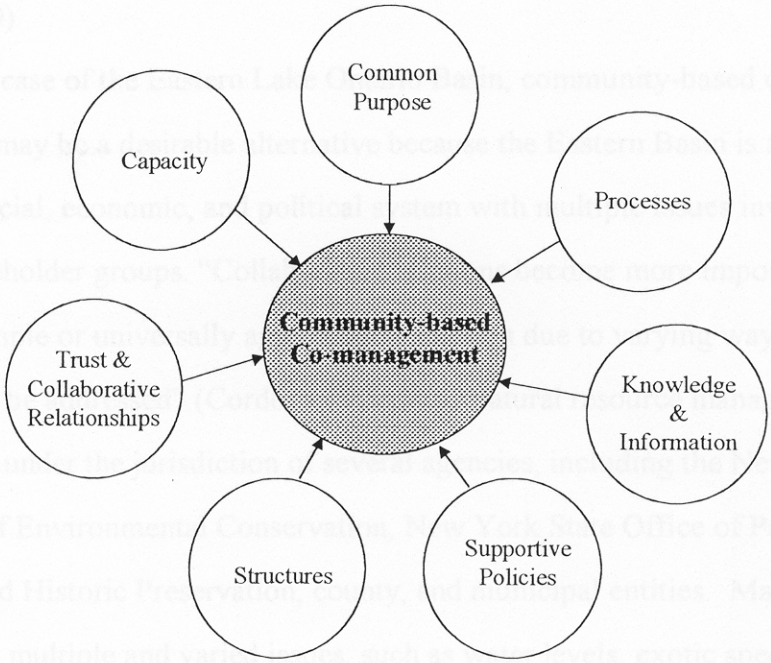

Figure 4.1. Requisites for community-based co-management.

Why Co-management of New York's Eastern Lake Ontario Basin?

Co-management – also called collaborative, cooperative, participatory, joint, or multi-stakeholder management – has been applied in the management of fisheries, parks and protected areas, forests, wildlife, rangelands, and water resources (Conley

and Moote 2001). This research focused on community-based co-management, which refers to *a partnership in which governmental agencies and local communities (including resource users, local governments, non-governmental organizations, and other stakeholders) negotiate and share, as appropriate, the responsibility for management of a specific area or set of resources* (adapted from IUCN 1997). Although collaborative management holds promise for better resource management than centralized, top-down approaches (Pinkerton 1989, Borrini-Feyerabend 1996, Wondolleck and Yaffee 2000), it is neither appropriate nor feasible in all situations (Kenney 2000).

In the case of the Eastern Lake Ontario Basin, community-based co-management may be a desirable alternative because the Eastern Basin is a complex ecological, social, economic, and political system with multiple issues involving multiple stakeholder groups. "Collaborative relations become more important when there is no simple or universally agreed upon solution due to varying ways in which the issues can be addressed" (Cordova 1997:34). Natural resource management in the region occurs under the jurisdiction of several agencies, including the New York State Department of Environmental Conservation, New York State Office of Parks, Recreation and Historic Preservation, county, and municipal entities. Management must consider multiple and varied issues, such as water levels, exotic species, and water quality. Creation of a shared history during the Lake Ontario Islands Search Conference also emphasized the intricate connections between natural, cultural, and historical resources and their importance to local recreation and tourism-based economies. This suggests that not only is collaboration among resource management agencies important, but that collaboration involving other stakeholders – including resource users, community leaders, educators, business owners, and community development and tourism professionals – could produce benefits by integrating environmental, cultural,

and economic goals. Although collaboration is needed at many levels because fish and wildlife are public resources and the Eastern Basin extends beyond international boundaries, I have limited this discussion to co-management between NYSDEC and local communities.

A Continuum of Co-management Possibilities

Several authors (Pinkerton 1994, Borrini-Feyerabend 1996, Sen and Nielsen 1996) have described co-management as a continuum of arrangements in which partners participate to varying degrees. For example, Pomeroy and Berkes (1997) describe a breadth of co-management possibilities, ranging from a government agency consulting with stakeholders prior to an action to stakeholders designing, implementing, and enforcing regulations with advice and assistance from government (Figure 4.2).

Stakeholder participation in the Lake Ontario Islands Search Conference could be described as "consultative" (McCay and Jentoft 1996). The agency consulted stakeholders and incorporated their input in decision-making but all decisions ultimately resided with the agency. To move toward more "cooperative" management (McCay and Jentoft 1996), including shared responsibility for decision-making, implementation, and evaluation of management actions, NYSDEC and local communities will need to negotiate appropriate co-managerial arrangements (Figure 4.2). The appropriate level of power-sharing may differ for different aspects of management. "Depending on the particular institutional and organisational set-up, different management tasks may be suitable for different forms of co-management decision-making" (Sen and Nielsen 1996:408). For example, in the area of ecosystem management, NYSDEC and other resource management agencies might retain primary

management responsibility in addition to ultimate legal authority, but others might appropriately take the lead to advance initiatives in sustainable resource-based tourism or education, for instance.

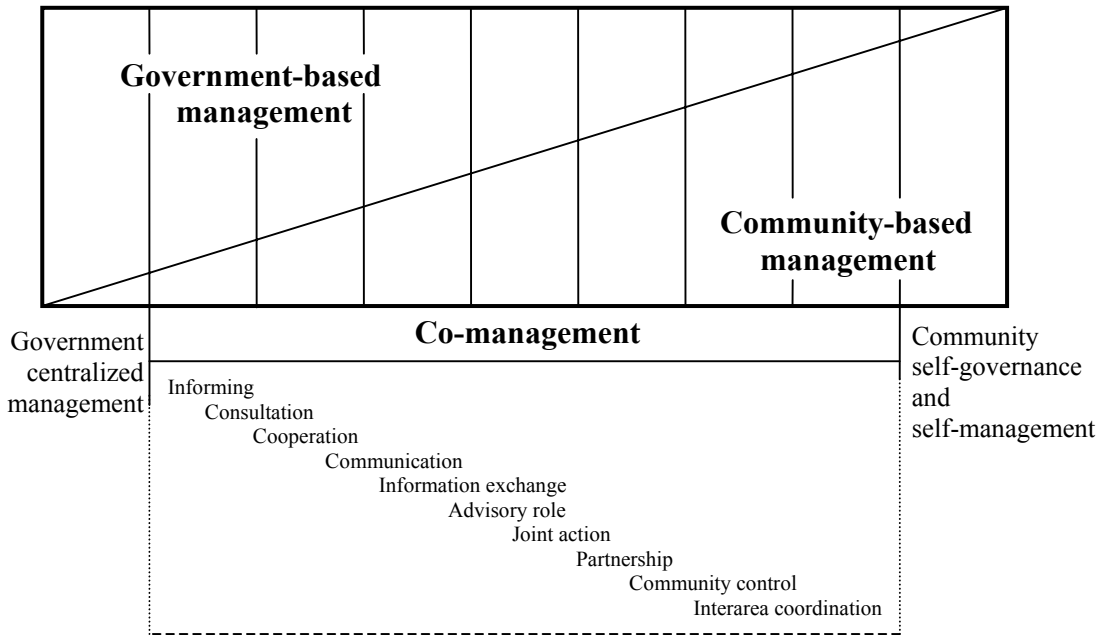

Figure 4.2. Pomeroy and Berkes' (1997:466) hierarchy of co-management arrangements.

Feasibility Assessment

A review of scholars' analyses of "successful" co-management arrangements suggests at least seven requisites for community-based co-management: common purpose, collaborative relationships and trust, appropriate processes, appropriate structures, capacity, knowledge and information, and supportive policy. In this section, I have drawn upon data collected through qualitative inquiry (i.e., document review, open-ended interviews with stakeholders, observation of search conference, and structured telephone interviews with participants following search conference), to as

sess the presence or absence of each of these requisites for co-management in the Eastern Basin region. Where data is inadequate to assess the feasibility of co-management, I have identified questions for additional research.

Common purpose: Present in Eastern Lake Ontario Basin

Collaboration can occur when stakeholders express interest in or share fears about the same issues (Cordova 1997). "Successful partnerships … highlight common interests or find ways to bridge compatible yet disparate interests" (Wondolleck and Yaffee 2000:73). Participants in the Lake Ontario Islands Search Conference identified common purpose that could help guide co-management efforts. Participants' descriptions of that common purpose emphasized:

- protection of natural resources whether for environmental, recreational, or economic benefit;
- greater community cooperation, regional planning, and collective management of the Eastern Basin;
- resource management that meets diverse interests; and
- working together to address these issues.

Collaborative relationships and trust: Present in Eastern Lake Ontario Basin

Pinkerton (1989:29) proposes that "the successful operation of co-management ultimately rests on the relationships among human actors." Wondolleck and Yaffee (2000:162) concur, "Collaboration ultimately takes the form of interpersonal relationships." The Lake Ontario Islands Search Conference provided an initial step in enhancing and developing collaborative relationships. For some participants, the search conference strengthened existing relationships. Many more participants reported forming new relationships and gaining trust in other stakeholders. Maintaining this

trust, especially stakeholders' trust in NYSDEC, will require follow through on commitments made during the search conference. The agency's implementation of some short-term actions identified during the search conference, such as the installation of buoys marking safe harbor, is a positive step for building and maintaining trust. A challenge will be continuing to build collaborative relationships through the design of ongoing processes for deliberation and supportive institutional structures.

Processes: Needed in Eastern Lake Ontario Basin

Social learning through deliberation is a continual, iterative process that requires reconsidering past assumptions, conclusions, and decisions on the basis of new data and changes in the decision situation (NRC 1996). Reunion of search conference participants in May, 2001 provided an opportunity for continued coordination and communication. Participants' interest in re-convening at approximately six-month intervals confirms their intent to remain involved with actions identified during the search conference. However, the sustainability of collaborative processes over time is limited by a lack of supportive institutional structures and clear leadership, as described below.

In addition to ongoing processes for involvement of search conference participants, processes are also needed to diffuse learning from the search conference to the broader community and to expand participation in co-management initiatives. This inquiry examined social learning among 32 participants in the Lake Ontario Islands Search Conference. Research that investigates how social learning occurs at higher levels of social aggregation is also needed (Röling and Wagemakers 1998). In addition, several actions identified during the search conference require involvement from others who were not participants in the event. Identifying and expanding membership

of the search group to encourage social learning among a larger group of stakeholders may be necessary for implementation of actions and strategies.

Structures: Needed in Eastern Lake Ontario Basin

Social learning around natural resource management involves not only a transformation of people but also of institutions and policies (Röling and Wagemakers 1998). Participants reported that the search conference increased their understanding of one another's concerns and helped build collaborative relationships. Maintaining these relationships requires an appropriate structure that enables participants to continue working together on common goals. Wondolleck and Yaffee explain (2000:115):

> Successful efforts at collaboration not only establish meaningful and effective processes of interaction, they find ways to make them endure over time. They institutionalize collaboration by creating structures and generating funding that will continue beyond initial partnership efforts. … Ultimately, they are self-sustaining because a structure is provided that facilitates productive interaction, and the partners continue to benefit from it.

Possibly the most powerful recommendation that emerged from the search conference was to form an Eastern Basin Working Group that would facilitate continued coordination and communication among those involved in community planning, ecosystem management, education, recreational resource use, and sustainable resource-based tourism. Further efforts are needed to develop a local structure that can sustain collaboration. Doing so will require human and financial resources.

Capacity: Some present, more needed in Eastern Lake Ontario Basin

Collaborative management requires that partners possess the capacity to participate (Cordova 1997). Working together in co-management initiatives can also help

build capacity (Wondolleck and Yaffee 2000) as partners identify creative possibilities that could not be realized by any single stakeholder group. "Co-management can, therefore, be a product of as well as a project in social integration and community vitalization" (Jentoft et al. 1998).

A more systematic assessment of community *and* agency capacity is necessary to assess the feasibility of co-management in the Eastern Basin. Observation of the search conference and interviews with participants suggested that local communities possess social capital (Putnam 1993), including thick social networks and shared norms (Gardner and Stern 1996), that could facilitate collaboration if channeled toward bridging (Putnam 2000) diverse stakeholder groups. However, some participants in the search conference felt that communities pull together less today than in the past and often miss opportunities.

As important or possibly more important than community capacity is the capacity of agencies to participate in co-management. In the Eastern Basin, NYSDEC filled a valuable leadership role by sponsoring the search conference. However, it is unclear who might continue to spearhead collaborative efforts. While it makes sense for NYSDEC to continue leading actions in the area of ecosystem management and, to some extent, recreational resource use, others are needed to lead community-based initiatives in community planning and cooperation, education, and sustainable resource-based tourism. Enthusiasm has been apparent among participants; however, a lack of leadership by persons with the organizational capacity to facilitate ongoing efforts may limit the potential for collaboration.

Knowledge and information: Some present, more needed in Eastern Lake Ontario Basin

Collaborative management also requires information, and information needs are constantly evolving (Cordova 1997). Collaboration can help build understanding through information sharing, learning from the public, educating the public, and joint research and fact-finding (Wondolleck and Yaffee 2000). Indeed, a strength of the search conference was the integration of community and scientific knowledge. Participants also identified information needs during the search conference, including dissemination of results of fish and wildlife resource inventories and research to support development of a tourism diversity plan.

Ideally, research would be designed in cooperation with stakeholders to ensure that results are relevant to the information needs of any co-management initiative. Mattfeld and colleagues (1998:253) describe a vision for developing research agendas interactively with stakeholders:

> Most of the critical [human dimensions] and biological research agenda can, and we hope soon will, be established routinely and in collaborative ways with stakeholders. We believe stakeholders can and should participate in the priority and cost-benefit analyses needed to define the most relevant and critical research agenda. Risk and cost are elements of decision making found in virtually all issues. Citizens and stakeholders weigh them every day. In our case, we can help put wildlife management with social and biological consequences in the context of their deliberations.

Supportive policies: Some present, more needed in Eastern Lake Ontario Basin

Collaborative management also requires supportive policies (Cordova 1997). In some arrangements, decentralization of government authority and responsibility to local level institutions is appropriate (Pomeroy and Berkes 1997, Zanetell 2000). Pomeroy and Berkes (1997:469) claim, “Co-management requires a clear commitment

on the part of government to the sharing of power and authority with local government … and community organizations." However, as Wondolleck and Yaffee (2000:103) note in the United States, "Agencies cannot delegate their statutory authority to collaborative groups, and decision making that affects public resources must be subjected to broader public involvement."

Decentralization of authority would not be appropriate for fish and wildlife management in the Eastern Basin because these are public resources managed for the citizens of New York State. However, policies are needed that are conducive to meaningful stakeholder involvement in the management process. Wondolleck and Yaffee (2000:103) explain:

> Agencies should take seriously the products of these groups' discussions and commit to implementing them if they meet statutory guidelines and pass muster in subsequent public review. By making that commitment, agencies create a sense of meaning and legitimacy associated with these processes that is sorely lacking in many traditional 'public participation' processes.

In addition, agencies must ensure that commitments and actions that they have taken as part of collaborative efforts are communicated back to partners and to the public. In the case of the Eastern Basin, NYSDEC should develop a communication strategy to keep search conference participants informed as they progress with the implementation of the LOIWMA plan.

For an agency like NYSDEC to truly engage in community-based co-management would require changes in agency priorities, organizational structure, policies and procedures. For instance, bureaucratic decision-making procedures designed to ensure agency accountability sometimes inhibit the flexibility and creativity crucial to collaborative initiatives. Procedural changes may be needed to allow creative collaborative activities. Agency staff members experience many competing demands on their time. Organizational policies are needed that reward staff for investing

in collaborative initiatives. Co-management may also require that an agency commit to long-term involvement in community development by fulfilling a facilitation role when natural resources are a focal point of the local economy and culture. For many natural resource agencies, this represents a fundamental change in their approach to management and may require not only changes in organizational policies but also legislative policy changes that enable agencies to effectively participate in partnerships with local communities.

An overall assessment

This inquiry found that common purpose and collaborative relationships developed among 32 participants in the Lake Ontario Islands Search Conference. Common purpose guides co-management initiatives and collaborative relationships are central to their success. Building upon this foundation to develop further collaboration among NYSDEC, other agencies, and local communities in the Eastern Basin region will require the design of appropriate processes that foster continual learning and involve additional stakeholders. Sustaining these processes will require appropriate structures, such as an Eastern Basin Working Group. Developing such local institutions requires both agency and community capacity. A weakness of the action component of this effort was the failure to identify a local change agent early in the process. As a result, the sustainability of energy and activity generated during the search conference is made more difficult by a lack of local leadership. In addition, co-management requires information and supportive policies, both of which are present to some extent but could be increased in the Eastern Basin.

Immediate action steps to advance co-management should include forming local institutions, such as an Eastern Basin Working Group, to support collaboration among partners in community planning, ecosystem management, education, recrea

tional resource use, and sustainable resource-based tourism. Collaborative efforts should consider problems and opportunities basin wide. For example, issues of ecosystem management basin-wide seem salient to more stakeholders than management of the Lake Ontario Islands Wildlife Management Area (LOIWMA) alone. Progressing with a co-managerial approach can bridge gaps between people working on intricately interwoven issues of environment, culture, community, and economy. Additional research is needed to assess agency and community capacity to participate in co-management, inform the development of local institutions, and examine how social learning can occur among the broader community.

Contributions

This inquiry took an innovative methodological approach by combining action and research components that simultaneously (a) engaged stakeholders from local communities in planning for the LOIWMA, and (b) investigated the role of social learning in collaborative natural resource management. Its results have enhanced conceptual understanding of social learning by describing this phenomenon as it occurred among participants in the search conference. Its results have also improved theoretical understanding of how social learning contributes to development of community-based co-management through identification of common purpose and transformation of relationships. In addition, this inquiry made contributions to practice. The identification of eight process characteristics that foster social learning can aid managers in designing stakeholder involvement processes that enhance public learning and empower action. Finally, the results of this inquiry suggest that policy or procedural changes may be necessary to enable agencies and communities to collaborate effectively in community-based co-management of natural resources.

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APPENDIX A

CONSERVATION AND SUSTAINABLE DEVELOPMENT: A CASE STUDY IN NEW YORK'S EASTERN LAKE ONTARIO BASIN

The following provides a case study description of the cormorant-fishery conflict that was a backdrop to this inquiry as the situation existed in the spring of 2000.

Introduction

In the Eastern Basin of Lake Ontario, issues of conservation and sustainable development lie at the heart of a decade-old controversy involving fish, birds, and people. In a complex and substantially human-altered ecosystem, the population of double-crested cormorants (*Phalacrocorax auritus*) has risen dramatically during the 1980s and '90s. Efficient fish-eating predators, cormorants have been implicated in the decline of the smallmouth bass (*Micropterus dolomieui*) fishery, which many residents of local tourism-based communities feel is threatening their economic livelihoods and traditional lifestyles. Sport fishing charter captains, marina owners, and others have urged state and federal agencies to aggressively control cormorants. At the same time, birders, environmentalists, and animal rights supporters have sought continued protection of cormorants. Cormorants' protection as a migratory species under federal law and international treaty creates a complex institutional context, involving a variety of actors at the local, state, federal, and international levels.
This paper provides a contextual description of the ecological, economic, social and political aspects of this case and identifies critical conservation and sustainable development (CSD) issues that are present. These include the challenge of addressing CSD in a complex and uncertain system, the tension in CSD between

whose interests (local and non-local) count. The goal of this paper is to provide a foundational understanding for research efforts addressing the question: How can local communities realize benefits from the fish and wildlife resources of Lake Ontario's Eastern Basin?

Contextual Description

The Eastern Lake Ontario Basin

The Eastern Basin of Lake Ontario (often called the Kingston Basin in Canada) is a relatively shallow area of 800 square miles with a maximum depth of less than 200 feet. The basin lies north and east of the Main Duck Sill running from Stony Point, NY to Prince Edward Point, Ontario and extends to the Lake Ontario outlet of the St. Lawrence River at Tibbets Point, NY - Wolfe Island, Ontario. The area contains a series of rocky points, islands, and shoals; several mesotrophic bays, including Henderson, Black River, Chaumont, and Guffin Bays; wetlands; and oligotrophic open lake areas. Roughly half of the area is under U.S. jurisdiction.

The eastern Lake Ontario islands and adjacent shoals comprise a rare ecosystem that provides important habitat for warmwater fishes, colonial waterbirds, waterfowl, and shorebirds. The "1998 New York State Department of Environmental Conservation and Office of Parks, Recreation and Historic Preservation Plan for Conserving Open Space in New York State" identifies the eastern Lake Ontario islands as a priority project given their unique fish and wildlife value (J. F. Farquhar, New York State Department of Environmental Conservation, unpublished report).

Four parcels in the Eastern Basin form the Lake Ontario Islands Wildlife Management Area (LOIWMA), which is owned by the New York State Department of Environmental Conservation (NYSDEC). The LOIWMA includes Little Galloo Island (43 acres), Gull Island (1 acre), and two parcels (20 acres) on Galloo Island. Lo

cated eight miles due west of Henderson Harbor, NY, Little Galloo is a colonial waterbird rookery that has been designated an Important Bird Area by the National Audubon Society and a Significant Habitat by New York State. In 1999, it provided nesting grounds for 53,000 pairs of ring-billed gulls (*Larus delawarensis*), 275 pairs of herring gulls gulls (*Larus argentatus*), 8 pairs of greater black-backed gulls (*Larus marinus*), 5, 681 pairs of double-crested cormorants, 1,445 pairs of Caspian terns (*Sterna caspia*), and 1 pair of black-crowned night heron (*Nycticorax nycticorax*) (J. F. Farquhar, New York State Department of Environmental Conservation, unpublished report). Although Little Galloo is viewed as an amazing wildlife spectacle by some, the cormorant has become a "black scourge" or "flying rat" in the eyes of people who believe that predation by cormorants is negatively impacting the Eastern Basin's world renowned sport fishery.

Double-crested cormorants

Usually found in flocks, the double-crested cormorant is a long-lived, colonial-nesting waterbird native to North America. One of 38 species of cormorants worldwide, and one of six species in North America, it is a large bird with dark plumage tinted a glossy green on its head, neck, and underparts. It has a slender, hooked bill, webbed feet set well-back on its body, and a throat pouch like its relative the pelican. The species is named for the two small tufts or crests of feathers that appear for a short time period on either side of the heads of adult birds in breeding plumage (USFWS Fact Sheets).

Breeding populations of double-crested cormorants are found in many locations throughout North America. A spread eastward of the interior population from the northern prairies formed the Great Lakes population. Cormorants were first reported breeding on Lake Ontario in 1945. Populations increased steadily during the

1950s, and control measures were authorized in Canadian waters to reduce suspected competition with commercial and recreational anglers. The Great Lakes population declined in the 1960s and early 1970s from a peak of about 900 nests in 1950 to 114 in 1973. The decline is attributed to human disturbance at nesting colonies, killing of birds, and the effects of chemical contamination from DDT, PCBs, and other toxic substances in the Great Lakes ecosystem (Miller 1997, USFWS Fact Sheets).

Lake Ontario's cormorant population began to grow again about 1974 and continued to grow dramatically into the mid-1990s. On Little Galloo Island, 22 pairs in 1974 grew to a peak of 8,410 pairs in 1996. Pollution control has lowered concentrations of toxic contaminants in cormorants' food supply, food is ample throughout the winter and summer ranges, and federal and state laws protect cormorants. There are now about 20,053 pairs, a historically high number, in 17 colonies throughout American and Canadian waters in eastern Lake Ontario and the upper St. Lawrence River (USFWS Fact Sheets).

Adult cormorants eat about one pound of fish per day. Because they are generalists and opportunistic feeders, cormorants' diets can vary considerably from site to site and throughout the breeding and nesting seasons. Small (less than six inches) fish, such as alewife (*Alosa pseudoharengus*), yellow perch (*Perca flavescens*), or gizzard shad, provide most of their food. Cormorant diets can also include steelhead (*Oncorhynchus mykiss*), lake trout (*Salvelinus namaycush*), brown trout (*Salmo trutta*), salmon, and smallmouth bass (USFWS Fact Sheets).

The Eastern Basin fishery

Known as "The Golden Crescent," the Eastern Lake Ontario Basin is internationally recognized for its recreational fishing. Sport fishing related tourism contributes substantially to the economic vitality of shoreline communities. For example, an

estimated 87,300 anglers spent $32,627,730 on fishing-related expenditures in Jefferson and Oswego Counties in 1996 (Connelly et al. 1999). Jefferson County has the highest angler effort and second-highest number of anglers and at-location expenditures of all New York counties (Kuehn and Connelly 1999).

In the Eastern Basin, smallmouth bass are the most abundant and widespread sport fish despite significant declines in recent years (Chrisman and Eckert 1999). The most sought-after sport fish, bass attracted over 35,000 directed angler trips in 1998 (McCullough and Einhouse 1999). Other components of the fishery include northern pike (*Esox lucius*) and largemouth bass (*Micropterus salmoides*), yellow perch, brown bullhead (*Ameiurus nebulosus*), Chinook salmon (*Oncorhynchus tshawytscha*) and lake trout, and steelhead in tributaries. The high profile salmon and trout fishery is less significant in the Eastern Basin than in the adjacent Central Basin (J. F. Farquhar, New York State Department of Environmental Conservation, unpublished report).

Cormorants, fish and people in conflict

As the cormorant population has grown, so too has suspicion among recreational and charter boat anglers that cormorants are a cause of declining fish populations. Frustration on the part of some residents with what they viewed as government inaction to address a serious problem boiled over in July, 1998, when ten men from shoreline communities took matters into their own hands and illegally shot nearly 1,000 birds.

Initial complaints arose in the late 1980s from anglers that had observed flocks of cormorants predating on freshly stocked trout and salmon fry. Changes in stocking practices – including stocking offshore to avoid concentrating fish, stocking early in the spring before cormorants arrive, and stocking inshore areas at night so fish can

disperse before daylight – helped minimize cormorants' impact. More recently, concern has focused on the impact of cormorants on the Eastern Basin's warmwater fishery. A series of studies conducted by the NYSDEC and United States Geological Survey Biological Resources Division (USGS BRD) in 1998 concluded that cormorants are significantly impacting the smallmouth bass population in the Eastern Basin (NYSDEC and USGS 1999). Cormorants consumed about 1.3 million smallmouth bass in 1998 (Johnson, Ross and Adams 1999), while anglers harvested 35,736 (McCullough and Einhouse 1999). Some people are also concerned about the impact of cormorants on other colonial-nesting waterbirds, such as black-crowned night herons, and on overall habitat quality.

The size of smallmouth bass populations depends on many factors, including water temperature, year class strength, time of spawning, food availability at various life stages, competition, predation pressure, and fishing mortality. Many changes occurring in the Eastern Basin have likely affected these factors. In addition to increased predation pressure by cormorants, changes that may negatively impact bass numbers include reduced productivity in Lake Ontario, the introduction of zebra mussels, increased water clarity, and increased predation pressure from other piscivores like walleye (Chrisman and Eckert 1999).

Anecdotal evidence suggests that the fishery decline has had severe economic impacts for some families in shoreline communities. One charter captain explains, "We don't have Kodak, we don't have Xerox, Bausch and Lomb. Two major corporations closed in Carthage. You know, those are people out of jobs. We're the north country, you know, we've been tourism for three generations here. We continue to be tourism. And if people want to catch fish, they're going to go someplace else. They're not going to come here. And we need people to come here. We need the business" (World Media Foundation 1998). Indeed, the estimated number of anglers

fishing in Jefferson County declined by 22% from 1988 to 1996. However, during that same period, estimated angler effort in days increased by 24% and estimated angler at-location expenditures in Jefferson County rose by 27% (Kuehn and Connelly 1999). These estimates include fishing in the St. Lawrence River and other rivers in the county in addition to fishing on Lake Ontario. Angler effort and expenditure trends for the Eastern Basin alone may differ.

While local sentiment is not unanimous, it seems overwhelmingly in favor of aggressive cormorant control. However, cormorants are a public wildlife resource and some people living outside of the local communities – as well as national environmental, birding, and animal rights organizations – hold very different views about cormorant management. For example, the National Audubon Society described a 1999 U. S. Fish and Wildlife Service (USFWS) permit received by NYSDEC to conduct control efforts (i.e., oiling cormorant eggs to suffocate the embryos) as "bowing to community pressure" when there is no science that shows that cormorants are having an impact on fish populations (Kloor 1999). A lawsuit filed by the Atlantic States Legal Foundation has sought an injunction of cormorant control efforts.

An intricate institutional framework

The debate over cormorants is occurring within a complex institutional framework crossing international boundaries. On the U.S. side, NYSDEC has primary responsibility for managing cormorants in eastern Lake Ontario. Any management action taken by NYSDEC must first be permitted by the USFWS, which has regulatory oversight to ensure that management actions do not cumulatively jeopardize cormorant populations. Because cormorants are protected under the Migratory Bird Treaty Act, a depredation permit must be obtained from the USFWS in order to disturb nests and eggs or to capture or shoot birds. The USFWS does not conduct on-the-ground

management activities. The U.S. Department of Agriculture's Wildlife Services Program provides on-the-ground management assistance to states, organizations, and individuals (USFWS Fact Sheets). Canadian agencies have management responsibility for cormorants in Canadian waters of the Eastern Basin.

Chronology of management actions

Annual surveys of nesting cormorants on Little Galloo have been conducted since 1986. NYSDEC and USGS BRD began food habits studies of cormorants in 1992. In 1994, to reduce competition between cormorants and black-crowned night herons and prevent habitat degradation, NYSDEC obtained a depredation permit from USFWS to destroy nests on Bass and Gull Islands and has since continued to prevent colonization of these islands by cormorants. In 1997, nests were also destroyed on Calf Island. A series of fishery assessment studies and an expanded food habits study led to the release of a report in December, 1998, which concluded that cormorants are significantly affecting the smallmouth bass populations in the Eastern Basin.

In 1999, NYSDEC proposed a five-year experimental management plan for smallmouth bass, other fishes, and double-crested cormorants in U.S. waters of the Eastern Basin of Lake Ontario. Objectives of the plan include: (1) restoring the structure and function of the warmwater fish community, (2) reducing the negative impacts of double-crested cormorants on nesting habitats and other colonial waterbird species, (3) improving the quality of smallmouth bass and other fisheries, and (4) fostering a greater appreciation for Great Lakes colonial waterbird resources. With a permit from USFWS, NYSDEC oiled eggs in all accessible cormorant nests on Little Galloo during five trips in the spring and summer of 1999. Cormorant productivity was reduced by about 98% through the egg oiling process (NYSDEC Division of Fish, Wildlife, and Marine Resources 1999). Still, population projections show that control

efforts by egg oiling alone would require five to ten years to realize a substantial reduction in cormorant numbers.

Communities affected

Geographic communities affected by fish and wildlife management in the Eastern Basin include the shoreline communities of Henderson Harbor, Sackets Harbor, Dexter, Chamount, and Cape Vincent, as well as inland communities with fishing-related businesses, such as Watertown. These are primarily small, rural communities with a historic dependence on natural resource-related tourism and agriculture. Also affected are "communities of interest," or groups of stakeholders involved in common activities. These include agencies, anglers, birders, business owners, charter captains, environmentalists, hunters, local government, owners of nearby islands, recreational boaters, residents, and tourists (Schusler and Decker 2000).

Critical Issues in Conservation and Sustainable Development

Some challenges

Several critical issues in CSD are present in the Eastern Lake Ontario Basin, not the least of which is defining the problem. The debate in the Eastern Basin has been framed as one over cormorants and fish. However, the real issue is how to preserve the natural resource base and promote the economic vitality of local communities. The conflict over cormorants is really a conflict involving people's different values (e.g., preservation vs. utilitarian resource use). Limiting the scope of discussion to cormorant management alone limits the range of possible solutions to either protecting or controlling cormorants and by what measures. Taking a more holistic view of both the ecosystem and human communities within it would enable people to address the broader issues of community development and environmental protection. People who

disagree in their views toward cormorant management may find that they agree on some overarching goals of CSD. As a tourism professional stated, "[The challenge is in] … balancing a respect for and protection of what we still have in environment and natural resources but bringing us up to speed with the rest of the economy in terms of re-developing the region" (Schusler and Decker 2000). The tension between preserving tradition and embracing progress common to many cases of CSD is also evident in communities along the Eastern Basin.

A more holistic view underscores the challenge of realizing conservation and sustainable development given incomplete scientific information about a complex and dynamic ecosystem. Many factors – both natural and human-induced – influence fish and wildlife populations of the Eastern Basin. The situation involves complex, value-laden judgements and conflict about the adequacy of scientific knowledge and about basic goals and values. A qualitative situation analysis conducted in the fall of 1999 found that interviewees agreed that decisions should be science-based but disagreed in their interpretations of agency-conducted studies, questioned the agency's credibility, and lacked sufficient information to evaluate the desirability and feasibility of possible benefits from management. Furthermore, the main source of information -- the media -- provided little context for understanding scientific data and failed to relay the complexity of the ecosystem (Schusler and Decker 2000). In addition, data for many questions is lacking altogether. For example, questions remain about the birds' migratory behavior and feeding range, as well as the impact that control actions will have. Also unknown are the answers to socio-economic questions, such as what is the economic impact of fishery decline on local communities, would sufficient demand exist for birding-related tourism, and how much tourism promotion do local communities desire? It seems the multi-step model of knowledge construction in which experts conduct research that is conveyed to citizens through the media is inadequate.

To realize CSD in the Eastern Basin, alternative forms of participation that engage stakeholders directly in deliberation around these issues may be required.

Participation

Agencies have made many efforts during the evolution of the cormorant controversy to gather public input and provide educational information. These efforts have included informational meetings, educational workshops, public meetings, open houses, and informal surveys. A citizen task force formed in 1994 recommended management objectives for cormorants in 1995. These recommendations included discouraging cormorants from Lake Ontario, protecting stocked fish, and providing accurate information about the fishery (NYSDEC Division of Fish, Wildlife, and Marine Resources 1999). Although useful, past participation efforts have not been without problem. For example, despite efforts to ensure widespread representation from a variety of stakeholder interests, the citizen task force membership was still dominated by fishing interests. Public meetings, while common and often helpful forms of participation, sometimes serve as "bully pulpits" for people holding extreme points of view on an issue. It can become a challenge to draw people with moderate views into the existing fray.

Researchers at Cornell University have proposed the use of a participatory planning event (T. M. Schusler, Cornell University, unpublished proposal) to bring together a variety of stakeholders in genuine deliberation around the question: How can local communities benefit from the fish and wildlife resources of the Eastern Basin? The design of this event will require many challenging decisions. At the forefront is who participates? The selection of participants will undoubtedly influence the process and outcomes of the participatory planning event. Conservation and sustainable development in the Eastern Lake Ontario Basin poses many of the same difficult

questions around participation that are found in other CSD cases. How are local and non-local stakes weighed? What is the distribution of costs and benefits? How much autonomy do local communities have given the mandates of state and federal agencies? These are important questions that will require careful consideration and continual re-visiting in the design of the planning process.

Conclusion

The controversy over double-crested cormorants in the Eastern Lake Ontario Basin may provide an opportunity to "make a silk purse out of a sow's ear." The controversy has generated substantial attention and interest in fish and wildlife management in the Eastern Basin. If this energy can be directed beyond the immediate conflict over cormorants to the broader questions of developing communities while protecting the environment, dialogue and deliberation among various stakeholders could build a foundation for future efforts toward conservation and sustainable development.

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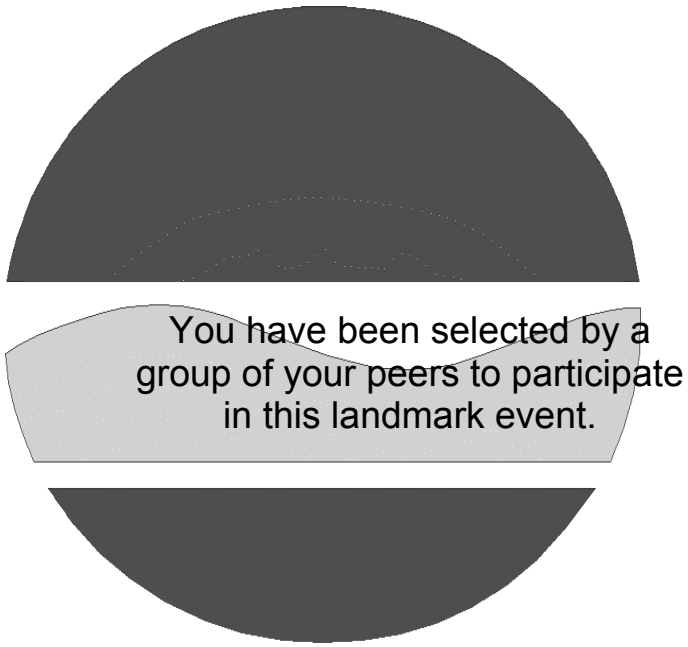
APPENDIX B

INVITATION AND AGENDA FOR

THE LAKE ONTARIO ISLANDS SEARCH CONFERENCE

LAKE ONTARIO ISLANDS SEARCH CONFERENCE



New York State
Department of Environmental Conservation
Regional Administration, Region 6
Dulles State Office Building, 317 Washington Street
Watertown, New York 13601-3787
Phone: (315) 785-2238 • **FAX:** (315) 785-2242
Website: www.dec.state.ny.us

LAKE ONTARIO ISLANDS SEARCH CONFERENCE

5 p.m. to 9 p.m. Wednesday, November 8
8:30 a.m. to 4:30 p.m. Thursday, November 9
and 9 a.m. to 4 p.m. Friday, November 10, 2000

Charter House Inn, Henderson Harbor
(to be confirmed)

Meals will be provided at no cost to you.

A limited number of rooms for overnight accommodations are also available at no cost to you.

Please complete and return the enclosed RSVP card by Friday, October 20, 2000.

By participating, you will have the opportunity to:

- Help create a management plan for the Lake Ontario Islands Wildlife Management Area (LOIWMA) that ensures the area will be a valued local community resource for years to come.
- Identify ways to support local communities and their economies by participating in discussion and activities focused on the Lake Ontario Islands, associated coastal resources, and local communities.

Why is DEC convening this process?

Our interest in convening the Search Conference has grown from a study conducted in 1999. A cooperative effort of DEC and Cornell University, the study's purpose was to provide information that would aid DEC in designing a community-based approach to develop a management plan for the Lake Ontario Islands Wildlife Management Area (LOIWMA).

The LOIWMA includes Little Galloo Island, which has received attention for its large breeding population of double-crested cormorants. Recognizing that the islands' management extends beyond cormorant management, we are interested in exploring management possibilities for the islands under DEC stewardship within the broader context of natural resource management in the Eastern Basin.

Doing so calls for a process that enables dialogue among stakeholders with a diverse range of perspectives and also draws upon additional areas of professional expertise, such as tourism and community development. As manager of several properties in the region, DEC would like to work with others interested in the region's natural resources and well-being of local communities to plan for future natural resource management.

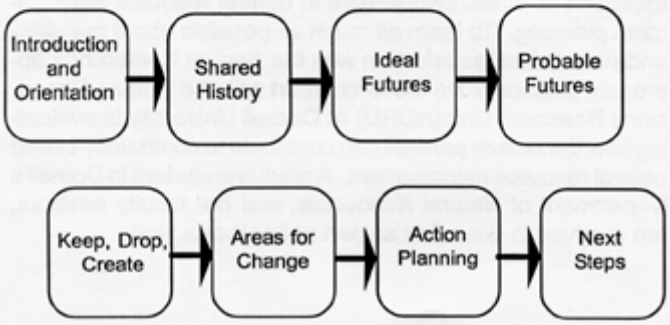
The Search Conference represents an innovation in DEC's approach to public involvement in natural resource management planning. To learn as much as possible about the utility and participants' satisfaction with the Search Conference approach, a cooperative research effort with the Human Dimensions Research Unit (HDRU) at Cornell University is evaluating how the search process can contribute to community-based natural resource management. A graduate student in Cornell's Department of Natural Resources, and her faculty advisors, are involved in this effort as part of her thesis work.

What is a Search Conference?

A Search Conference is a participatory planning event that usually involves 25-75 people and lasts 2½ days. First developed in the 1960s, the search method has been used effectively by organizations and communities for a variety of purposes from strategic planning to community development, addressing social, environmental, and economic issues. The process is called a 'search' because it brings people together to identify and discuss community needs and aspirations, and then to explore possibilities or 'search' for a desirable future for their community.

The Search Conference offers a structured approach for a group to find both common and separate ground and discover how to advance their interests toward a future acceptable to all involved. The Search Conference proceeds through a series of small and whole group sessions (illustrated below). Participants share their understanding of a situation, identify ideal futures for their community, predict probable futures, identify areas for change, set priorities, and initiate action planning. The Search Conference is not an end in itself, but a catalyst for ongoing activity.

Search Process Flowchart



The key question that this search conference will address is:

What is the ideal future land use and management of DEC-owned islands in the Eastern Lake Ontario Basin, considering the relationship of the islands to coastal communities?

The search conference will bring together a diverse group of people to tackle this question keeping in mind issues such as:

- Protecting natural resources
- Benefiting citizens and local communities
- Developing economic opportunities
- Considering concerns of all users
- Sustaining community participation
- Recognizing legal limitations

Your input is crucial to the development of a management plan for the Lake Ontario Islands that complements the interests of local communities.

Questions?

Please contact Tania Schusler at Cornell University
Phone: 607-255-4136 Fax: 607-255-0349
E-mail: tms23@cornell.edu
Mail: Department of Natural Resources, Cornell University, Fernow Hall, Ithaca, NY 14853

Lake Ontario Islands Search Conference Steering Group

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David Cutter
Seaway Trail

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Gary DeYoung
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NYSDEC Region 6

Michael Geiss
NYS Office of Parks, Recreation and Historic Preservation

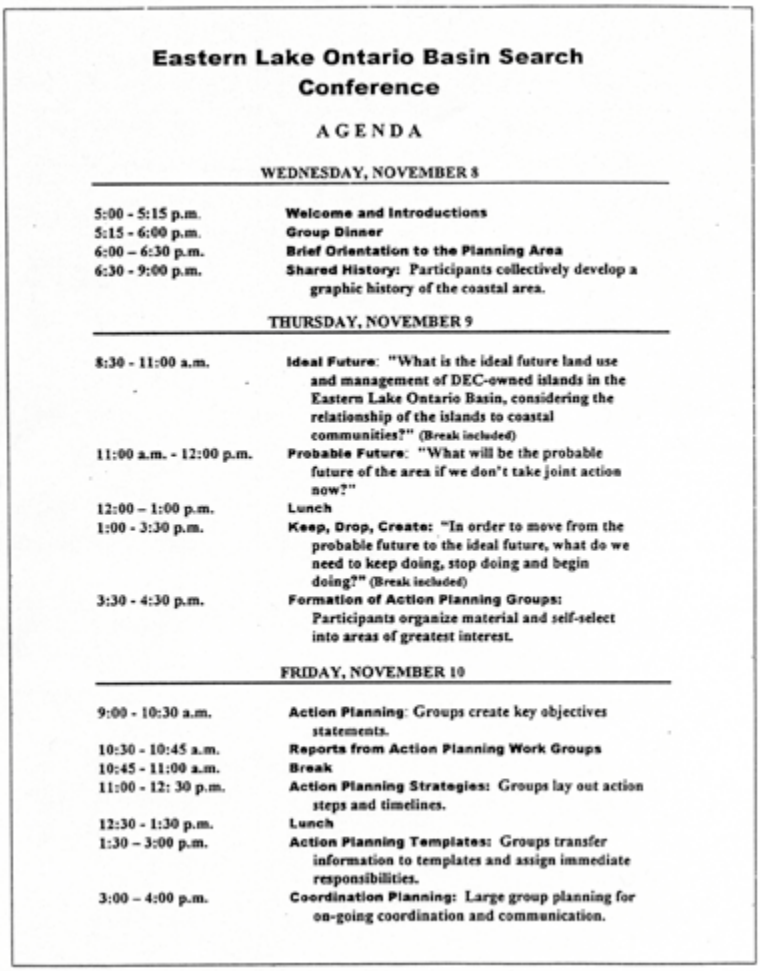
Linda Gibbs
Tug Hill Commission

Robert Horr III
Town of Hounsfield

Diane Kuehn
New York Sea Grant

David Prosser
North Country Bird Club

Frank Ross
Town of Henderson



Eastern Lake Ontario Basin Search Conference

AGENDA

WEDNESDAY, NOVEMBER 8

5:00 - 5:15 p.m.	**Welcome and Introductions**
5:15 - 6:00 p.m.	**Group Dinner**
6:00 – 6:30 p.m.	**Brief Orientation to the Planning Area**
6:30 - 9:00 p.m.	**Shared History:** Participants collectively develop a graphic history of the coastal area.

THURSDAY, NOVEMBER 9

8:30 - 11:00 a.m.	**Ideal Future**: "What is the ideal future land use and management of DEC-owned islands in the Eastern Lake Ontario Basin, considering the relationship of the islands to coastal communities?" (Break included)
11:00 a.m. - 12:00 p.m.	**Probable Future**: "What will be the probable future of the area if we don't take joint action now?"
12:00 – 1:00 p.m.	**Lunch**
1:00 - 3:30 p.m.	**Keep, Drop, Create:** "In order to move from the probable future to the ideal future, what do we need to keep doing, stop doing and begin doing?" (Break included)
3:30 - 4:30 p.m.	**Formation of Action Planning Groups:** Participants organize material and self-select into areas of greatest interest.

FRIDAY, NOVEMBER 10

9:00 - 10:30 a.m.	**Action Planning**: Groups create key objectives statements.
10:30 - 10:45 a.m.	**Reports from Action Planning Work Groups**
10:45 - 11:00 a.m.	**Break**
11:00 - 12: 30 p.m.	**Action Planning Strategies:** Groups lay out action steps and timelines.
12:30 - 1:30 p.m.	**Lunch**
1:30 – 3:00 p.m.	**Action Planning Templates:** Groups transfer information to templates and assign immediate responsibilities.
3:00 – 4:00 p.m.	**Coordination Planning:** Large group planning for on-going coordination and communication.

APPENDIX C

LAKE ONTARIO ISLANDS SEARCH CONFERENCE

OBSERVATION GUIDE

Prepared by Tania Schusler, November 3, 2000

Thesis statement

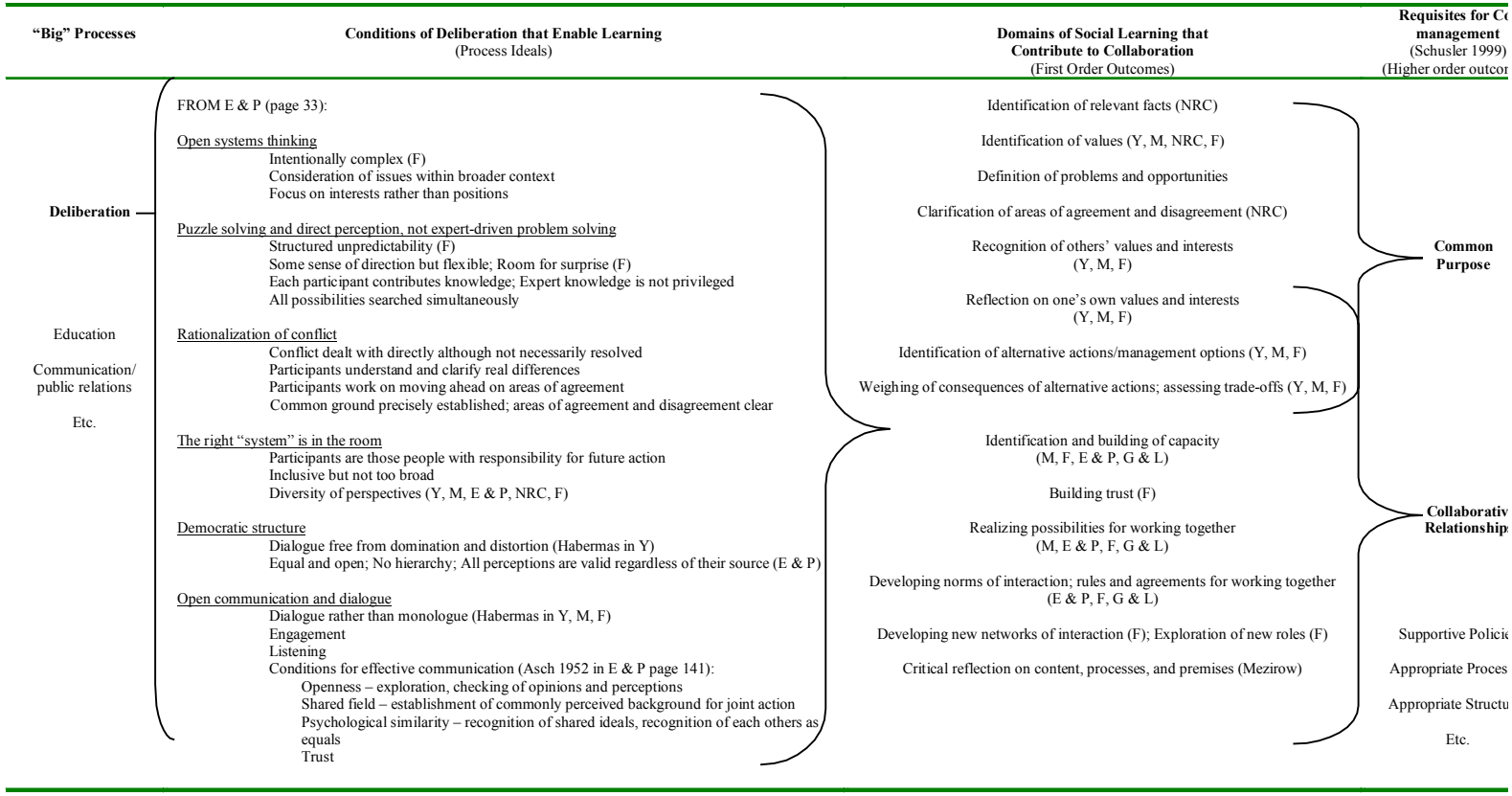
Deliberation that enables social learning contributes to the development of community-based co-management (through the identification of common purpose and the development of collaborative relationships).

(Note: With respect to collaborative relationships, we recognize that many of the participants already have relationships with one another through their interactions in other realms of life. Thus, we may observe evidence of existing relationships and/or the development of new relationships.)

Our observations will provide evidence to support or refute this thesis. And, hopefully, our observations will be descriptive and rich enough to help us understand *why* learning does or does not occur and *how* it may or may not contribute to the identification of common purpose and the development of collaborative relationships. Thus, during observation, please be descriptive. Our observations will be the data for later analysis. Follow-up inquiry with participants will be conducted within a few weeks after the search conference to help confirm or refute our interpretations. The follow-up inquiry will provide additional data to investigate phenomena that may be difficult to observe. Our observations will contribute to "hypotheses" or the identification of phenomena to explore in the follow-up inquiry.

Theoretical Framework (See Next Page)

<u>Thesis statement</u>: Deliberation that enables social learning contributes to the development of community-based co-management.



Prepared by Tania Schusler, October 31, 2000 Y = Yankelovich 1991, M=Mathews 1994, NRC=NRC 1996, E & P=Emery & Purser 1996, G & L = Greenwood & Levin 1998, F=Forester 1999

Definitions

Deliberation includes any formal or informal process to communicate, raise and collectively consider issues, increase understanding, and arrive at substantive decisions. Deliberation also implies intentionality, purpose, and a sense of having carefully thought out the consequences of actions. "In deliberation, people confer, ponder, exchange views, consider evidence, reflect on matters of mutual interest, negotiate, and attempt to persuade each other. Deliberation includes both consensual communication processes and adversarial ones" (NRC 1996:73).

Social learning refers to learning by individuals that can occur only when they engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding.

In this case, **community-based co-management** refers to a partnership in which governmental agencies and local communities (including resource users, local governments, non-governmental organizations, and other stakeholders) negotiate and share, as appropriate, the responsibility for management of a specific area or set of resources (adapted from IUCN 1997).

CHARACTERISTICS OF THE PROCESS (i.e. "Conditions that enable social learning")

Open systems thinking

"…open systems thinking works from the premise that no living system can be understood separate from its context" (Emery and Purser 1996:76) – i.e., any piece is connected to other pieces

"… open systems thinking views the world as consisting of a complex set of interwoven relations between wholes and their parts …" (Emery and Purser 1996:76) – i.e., the whole is greater than the sum of the parts

Do people recognize that a "system" (ecosystem, social system, economic system, etc.) exists? How does the group define the "system"? What does it include or exclude? Whom does it include or exclude? By what method(s) is this decided?

(Note: In the search question, the system has already been defined to some extent.)

Puzzle solving and direct perception, not expert-driven problem solving

"Puzzle learning is dependent on human perception because all possibilities must be searched simultaneously. … While an expert provides specialized knowledge for one piece of the puzzle, his or her scope is apt to be too narrow to make sense of the complexity of the whole. In a Search Conference, everyone has expertise, and every participant contributes some relevant knowledge for understanding different pieces of the puzzle" (Emery and Purser 1996:95).

How are problems approached? How broad is the scope of issues considered? How complex are the issues considered? To what extent is purpose/direction clear vs. confused or chaotic? To what extent is the process rigid or flexible? Does room for surprise exist? Are problems considered in a linear, sequential way or non-linearly and from many angles?

Is the knowledge of some participants privileged over that of others?

Rationalization of conflict

"The Search Conference process doesn't pretend that there can be perfect harmony in a complex world. It appreciates diversity and differences . . . However, when significant differences arise in the Search Conference, the goal is not to negotiate a compromise or gain grudging agreement to support something some participants still basically disagree with. Rather, managers use a special process in a Search

Conference to make differences rational, while at the same time establishing the areas of common ground – those areas upon which participants can agree. To rationalize conflict means to take conflict seriously, not to skirt around it or play it down – and yet not intentionally provoke it for the sake of provoking it. By rationalizing conflict, we mean that participants need to truly understand and clarify their real differences. They must know precisely where the boundary lies between what they agree with and what they do not agree with" (Emery and Purser 1996:142).

How is conflict handled? Do participants have the opportunity to disagree? Are areas of agreement and disagreement clear or blurred? How does this occur?

The right "system" is in the room

"The only people who attend a Search Conference are those who are part of the system, since they are the ones that have true responsibility for its future. It is important to get the right system in the room, that is, to assemble the people whose knowledge is essential to achieving the purpose of the Search Conference" (Emery and Purser 1996:34).

"Building a conference on the right system involves including people with every type of responsibility for the outcome, as well as excluding people with no responsibility for it" (Emery and Purser 1996:83).

To what extent do participants have responsibility for the job at hand? For future action? Is the group inclusive of all stakeholder interests? Are people missing that should be present? Are people present that are not really part of the "system"?

How homo/heterogeneous is the group? What diversity (or lack thereof) in interests, experiences, demographics, etc. is present in this group?

Democratic structure

". . . responsibility for the control and coordination of work is located with those who are actually doing the work" (Emery and Purser 1996:108).

". . . each person has equal power to participate in making decisions and determining outcomes" (Emery and Purser 1996:114).

What are the dynamics between "citizens" and "professionals"? What knowledge is considered valid? Who is considered credible? What power relationships are present? To what extent are interactions equal and open? Who manages processes? How are decisions made?

Open communication and dialogue

"A Search Conference seeks to realize the rich potential of face-to-face human interaction. ... [It] is intent on establishing the conditions for effective and influential communications ... Solomon Asch (1952) outlined four conditions essential for effective and influential communications: openness, shared field, psychological similarity, and trust" (Emery and Purser 1996:37-38).

Openness – "... people have to know that they are in a situation that is totally open to their investigation and that things are what they appear to be. Nothing must be hidden from view" (Emery and Purser 1996:136).

"Search conferencing is also designed to lead to the emergence of what Asch called a mutually shared field. In the first phase of a Search Conference, participants focus on their environment, thereby establishing the presence of a field that has features they all perceive. With the emergence of this shared context, people validate their perception that they all live in the same world. The third condition, basic psychological similarity, is established primarily through the sharing of human ideas that are elicited when people articulate and decide on a desirable future. As these condi

tions are established, so the fourth condition of trust develops and evolves" (Emery and Purser 1996:38).

To what extent are people engaged? How would you characterize the dialogue (e.g., one-sided; checking of opinions and perceptions; listening to one another; dominated by a single interest; etc.)?

CONTENT/FIRST ORDER OUTCOMES

(i.e., Domains of learning that contribute to collaboration)

General areas of focus: The *kind* of event – what is occurring, when, and for how long – and the *nature* of the event. For example, if the group reaches some new insight, what was the insight? How did the group arrive at it? Was it reached through arduous discussion over the course of two days or in a moment of synergistic brilliance? Was an insight reached by a small group considered valid by the large group? Etc. Also, do we see change occur temporally as the search progresses?

Identification of relevant facts and beliefs (knowledge claims)

Defn: Discussion about factual information or beliefs, learning what factual information is relevant, learning what questions to ask with respect to facts about natural resources and human communities

Egs: Species present on islands, biological studies about fisheries, income generated by fishing-related tourism, demand for birding-related tourism, etc.

Identification of values

Defn: Learning about what is important to people, learning about purpose

Egs: Protection of natural resources, promotion of economic development, preservation of native species, promotion of recreational opportunities, maintenance of

communities' rural character, preservation of fishing heritage, provision of employment opportunities, etc.

Focus: Do participants share values or do their values conflict with one another's? Do individuals themselves hold conflicting values (i.e., many people may have multiple values, some of which could conflict)?

Definition of problems and opportunities

Defn: Statement of problems that exist and/or opportunities that could be realized

Egs: The decline of smallmouth bass is a problem. Youth moving out of the area to seek employment is a problem. The magnitude of birds present on the islands could provide opportunities for tourism and education. Etc.

Focus: How are problems and opportunities framed? How broadly are problems and opportunities defined (eg., cormorants are a problem = fairly narrow definition; decline of the fishery is a problem = somewhat broader defintion; economic decline in our communities = very broad definition)? Does breadth of problem/opportunity definition have implications for ensuing discussion? For identification of possible "solutions"?

Clarification of areas of agreement and disagreement

Focus: How well are areas of agreement and disagreement discerned? How is conflict handled? Is it openly recognized or is it "swept under the rug"? Can conflict over some issues be set aside so the group can focus on areas of agreement? Does conflict impeded progress? Is conflict an impetus for learning? Are there more areas of agreement or disagreement?

Recognition of others' values and interests

Defn: Better understanding of the views that other participants hold and why such views are held.

Egs: Statements that reflect changes in understanding or perceptions of other stakeholders.

Reflection on one's own values and interests

Defn: Considering one's own views and how valid they are given new understanding; possibly changing one's own views

Egs: Statements that reflect consideration of one's own views in light of new information, others' points of view, or other forms of new understanding.

Identification of alternative actions/management options

Egs: Developing safe harbor site. Creating educational materials. Lethally controlling cormorants. Promoting bird-related tourism. Etc.

Weighing of consequences of alternative actions; assessing trade-offs

Defn: Considering the effects that alternative actions could have on all stakeholders.

Focus: Are all stakeholders considered? How are stakes weighed? How easy or difficult is this process?

Identification and building of capacity (or lack of capacity)

Defn: Recognition of resources and skills available within group or within communities. Development of additional capacity by building working relationships

and gaining new skills, new knowledge, new ways of interacting. Or, recognition that action cannot be taken because of lack of resources, skills, and working relationships.

Egs: Identification of funding sources that could be tapped into; Offer by someone to see if their organization would be willing to provide staff support to coordinate follow up communication among participants; Etc. Statement that an action cannot be accomplished because no one has time or funds to do it.

Focus: What limits collaboration and future action?

Building trust (or lack of trust)

Egs: Evidence of trust already existing among participants due to existing relationships in other realms of life. Comments reflecting a lack of trust in the DEC. Comments demonstrating a change in trust over the course of the search conference (e.g., I usually don't trust DEC to listen to what people want, but this event has been a pleasant surprise showing me that they do sincerely want our input.)

Realizing possibilities for working together

Defn: Identification of opportunities in which participants can link their activities to work toward a common goal.

Egs: The chamber of commerce, tourism council, and extension programs join efforts to produce an educational and promotional brochure about the islands.

Developing norms of interaction; rules and agreements for working together

Defn: Norms of interaction includes both guidelines utilized during the search conference, as well as guidelines developed for follow-up or future action.

Egs: During the search conference, everyone agrees that all opinions will be respected equally; A working group agrees to meet periodically following the search conference; Etc.

Developing new networks of interaction; Exploration of new roles

Egs: Formation of group to lobby for cormorant-related legislation; Formation of group to develop an educational brochure about the islands; Exchange of contact information amongst individuals interested in the islands' tourism-related potential; Agreement that action teams will meet every three months; Etc.

Critical reflection on content, processes, and premises

Defn: Examination of the justification for one's beliefs; assessment of the validity of one's assumptions.

Egs: Content: I did not realize that other species were present on the islands other than cormorants. Process: This search conference is an interesting approach to public involvement, but I'm not sure it would be appropriate in a lot of situations. Premise: I define wildlife management as the manipulation of populations of critters, but it seems these people are talking about management in a broader sense. Maybe I should broaden my own definition.

Activity _____ **Date** _____

Time _____

Observer_____

Page _____

SENSITIZING CONCEPTS – CONTENT

Facts

Values

Problems & opportunities

Agreement & disagreement

Recognition of others

Alternative actions

Weighing of alternatives' consequences

Capacity

Trust

Possibilities for working together

Norms of interaction

Networks

Reflection

OTHER

SENSITIZING CONCEPTS – PROCESS

System	**Puzzle/problem**	**Conflict**	**Participation**	**Decision-making**	**Communication**
definition	***solving***	*Able to disagree?*	*"Right" people present?*	*How?*	
Dialogue?					
How?	*Predictability?*	*How handled?*	*Diversity?*	*Power dynamics?*	*Engagement?*
Breadth?	*Flexibility?*	*Clarity?*	*Full and equal?*	*Ground rules?*	*Openness?*
Complexity?	*Direction?*		*Who considered credible?*		*Domination?*
	Surprise?		*Whose knowledge counts?*		

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APPENDIX D

LAKE ONTARIO ISLANDS SEARCH CONFERENCE

EVALUATION INSTRUMENTS

Eastern Lake Ontario Basin
Mid-Search Check

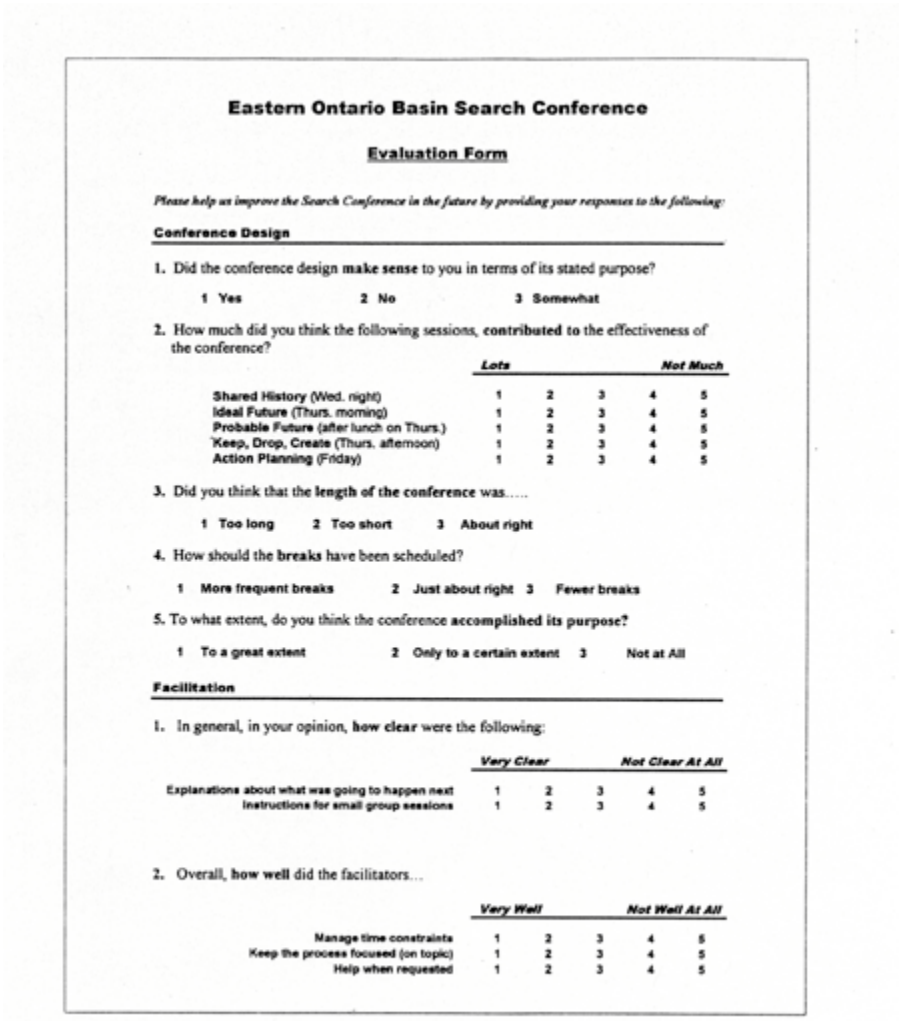
1. At what point(s) in the discussion (either small or large group), have you felt that your ideas differed from those being expressed?

2. When your ideas differed, did you express them? If not, why not?

3. If you did express a different perspective or point of view, what became of your ideas?

4. What have you learned by participating in this process so far?

5. Overall, how are you feeling about the process so far?



Eastern Ontario Basin Search Conference

Evaluation Form

Please help us improve the Search Conference in the future by providing your responses to the following:

Conference Design

1. Did the conference design **make sense** to you in terms of its stated purpose?

   1 Yes **2 No** **3 Somewhat**

2. How much did you think the following sessions, **contributed to** the effectiveness of the conference?

	Lots				*Not Much*
Shared History (Wed. night)	1	2	3	4	5
Ideal Future (Thurs. morning)	1	2	3	4	5
Probable Future (after lunch on Thurs.)	1	2	3	4	5
Keep, Drop, Create (Thurs. afternoon)	1	2	3	4	5
Action Planning (Friday)	1	2	3	4	5

3. Did you think that the **length of the conference** was.....

   1 Too long **2 Too short** **3 About right**

4. How should the **breaks** have been scheduled?

   1 More frequent breaks **2 Just about right** **3 Fewer breaks**

5. To what extent, do you think the conference **accomplished its purpose?**

   1 To a great extent **2 Only to a certain extent** **3 Not at All**

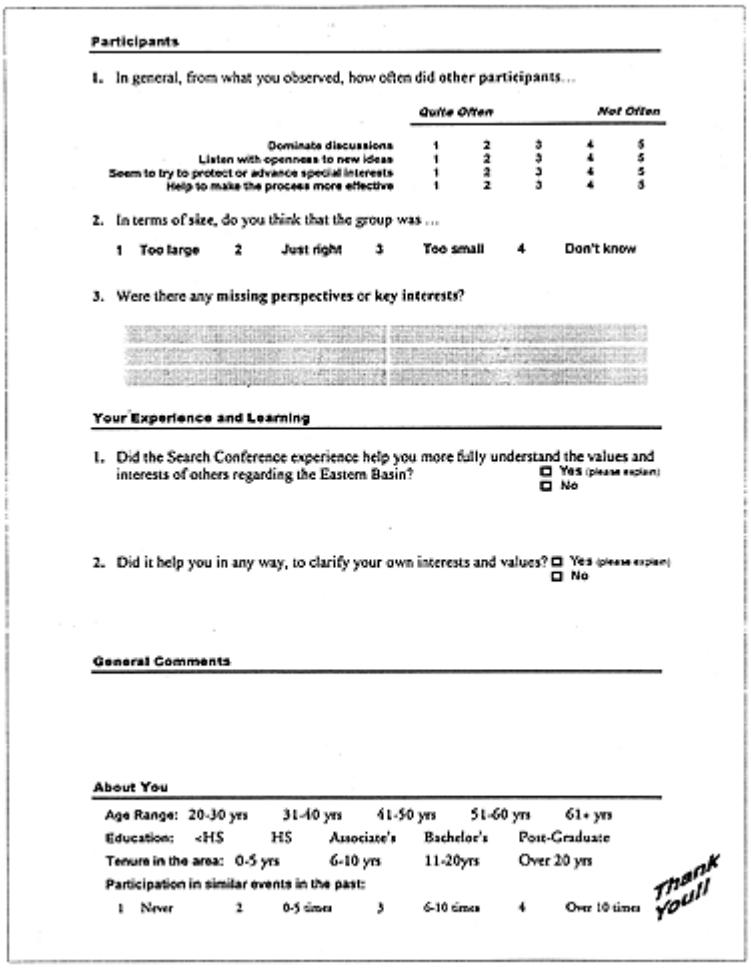
Facilitation

1. In general, in your opinion, **how clear** were the following:

	Very Clear				*Not Clear At All*
Explanations about what was going to happen next	1	2	3	4	5
Instructions for small group sessions	1	2	3	4	5

2. Overall, **how well** did the facilitators...

	Very Well				*Not Well At All*
Manage time constraints	1	2	3	4	5
Keep the process focused (on topic)	1	2	3	4	5
Help when requested	1	2	3	4	5



Participants

1. In general, from what you observed, how often did other participants...

	Quite Often				Not Often
Dominate discussions	1	2	3	4	5
Listen with openness to new ideas	1	2	3	4	5
Seem to try to protect or advance special interests	1	2	3	4	5
Help to make the process more effective	1	2	3	4	5

2. In terms of size, do you think that the group was ...

1 Too large 2 Just right 3 Too small 4 Don't know

3. Were there any missing perspectives or key interests?

Your Experience and Learning

1. Did the Search Conference experience help you more fully understand the values and interests of others regarding the Eastern Basin? ☐ Yes (please explain) ☐ No

2. Did it help you in any way, to clarify your own interests and values? ☐ Yes (please explain) ☐ No

General Comments

About You

Age Range: 20-30 yrs 31-40 yrs 41-50 yrs 51-60 yrs 61+ yrs

Education: <HS HS Associate's Bachelor's Post-Graduate

Tenure in the area: 0-5 yrs 6-10 yrs 11-20yrs Over 20 yrs

Participation in similar events in the past:

1 Never 2 0-5 times 3 6-10 times 4 Over 10 times

Thank You!!

APPENDIX E

LAKE ONTARIO ISLANDS POST-SEARCH INQUIRY

TELEPHONE INTERVIEW/SURVEY GUIDE

LAKE ONTARIO ISLANDS SEARCH CONFERENCE

POST-SEARCH TELEPHONE INTERVIEW/SURVEY GUIDE

PARTICIPANT NAME _____ **"PHONE TAG" NOTES:**

DAY PHONE _____

EVE PHONE _____

DATE SURVEY CONDUCTED _____

INTRODUCTION

Hello. My name is _____. I am calling from Cornell University. May I speak with _____?

I am calling to follow up on the Lake Ontario Islands Search Conference that you participated in last month. Thank you for contributing to this event. As you may recall, the search conference occurred as part of a cooperative effort between DEC and Cornell University that includes a research component. I am calling to ask you some questions in this regard. Completing this phone survey should take no longer than 20 minutes. Would you have time now to answer these questions?

If no, when may I call you back?

If yes, before we begin, let me remind you that all of your responses will be confidential. That is, nothing you say will be identified with your name but may be referenced as, "A participant said XYZ."

Many of the questions have the same response categories. Would you like to jot those down for reference before we begin? (*Allow time to get pen and paper if needed.*) They are to a great extent, moderate extent, slight extent, or not at all. For some questions, I may also ask you for examples or elaboration.

The first set of questions focuses on new things you may have learned during the search conference.

Q1. First, to what extent did you learn new factual information? (*Repeat response categories.*) Great Moderate Slight Not at all

Q2. To what extent did you learn about the concerns of other participants? Great Moderate Slight Not at all

If response to Q2 was great or moderate:

Q2a. Would you please describe something you learned about the concerns of other participants?

Q3. To what extent did participating alter your own concerns related to natural resource management in the Eastern Basin? Great Moderate Slight Not at all

If response to Q3 was great or moderate:

Q3a. Would you please describe how your own concerns changed?

Q4. To what extent did participating help you see areas in which you agree or disagree with others? Great Moderate Slight Not at all

If response to Q4 was great or moderate:

Q4a. What areas of agreement or disagreement surprised you?
(*Be sure to note whether response relates to area of agreement or disagreement.)*

Q5. To what extent were problems or opportunities identified that you were not previously aware of? Great Moderate Slight Not at all

If response to Q5 was great or moderate:

Q5a. Would you please describe an example of a problem or opportunity that you were not previously aware of?
(*Be sure to note whether response relates to a problem or opportunity.)*

Q6. To what extent were actions identified to address problems or capitalize on opportunities? Great Moderate Slight Not at all

Q7. To what extent did you become aware of the presence or lack of resources available to your community? Great Moderate Slight Not at all

If response to Q7 was great or moderate:

Q7a. Would you please describe an example of a resource that was identified as present or missing? (*Be sure to note whether resource was identified as present or missing.*)

Q8. To what extent did participants identify a common purpose during the search conference? Great Moderate Slight Not at all

If response to Q8 was great or moderate:

Q8a. Would you please describe that common purpose?

Q8b. How did the identification of this purpose come about?

The next set of questions focuses on relationships among participants at the search conference.

Q9. First, did your existing relationships with other participants change? Yes No

If response to Q9 was yes:

Q9a. Would you please describe in what ways your existing relationships changed?

If response to Q9a was a positive example:

Q9b. Were any of your existing relationships weakened? (*If yes, probe for description.*)

If response to Q9a was a negative example:

Q9c. Were any of your existing relationships strengthened? (*If yes, probe for description.*)

Q10. To what extent did you form new relationships with other participants? Great Moderate Slight Not at all

If response to Q10 was great or moderate:

Q10a. What best helped facilitate the formation of these new relationships?

Q11. To what extent did you gain trust in other participants? Great Moderate Slight Not at all

If response to Q11 was great or moderate:

Q11a. How did this building of trust occur?

Q12. To what extent do you anticipate being involved in actions initiated during the search conference? Great Moderate Slight Not at all

If response to Q12 was great or moderate:

Q12a. Which actions will you be involved in?

Q12b. What contributed to your willingness to be involved in these actions?

If response to Q12 was slight or not at all:

Q12c. What contributed to your decision <u>not</u> to be involved in these actions?

In my last few questions, I would like to ask about your general impressions of the search conference.

Q13. What did you find most valuable about participating in the conference?

Q13a. What did you find least valuable?

Q14. As you know, this search conference was the first such event hosted by DEC. Did participating in it alter your impression of DEC? *If yes*, how was your impression of DEC altered?

Q14a. Do you feel that DEC should use the search conference format again? *If yes,* for what types of situations?

Q15. Is there anything else about your experience during the search conference, either positive or negative, that you would like to add?

CONCLUSION

Thank you very much for your time. (Inquire about permission to include contact information for those missing from participant list). You can expect to receive a summary report from the search conference around the end of the year. _____ (I/Tania Schusler) will provide an update on the research portion of this effort when the search conference group re-convenes in the spring. If you have any questions in the interim, please feel free to contact (me/her) at any time. We look forward to seeing you again next year. Thank you.

“I learned a lot.”